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THE OCCURRENCE OF MONILIA IN RELATION TO PSORIASIS *

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In a preliminary report of our studies [1] concerning the occurrence of *Monilia* in psoriasis, we stated the possibility that a relationship might exist between these organisms and the disease. Our studies have now reached a point at which we feel justified in giving a final report. We do not infer that the relationship of *Monilia* to this disease has been satisfactorily determined by the results which we report in this article, but at least for the present, we are not able to push our work further in a direction which will serve to give a definite answer. We do, however, believe that the studies reported here necessarily raise the question as to what relationship does exist and leave it for further studies to answer.

This is not the place to discuss the various theories concerning the etiology of psoriasis, and it is probably sufficient simply to recall that in general two theories have been advanced: one setting forth that psoriasis is an expression of a metabolic disturbance; the other that this common dermatologic condition is due to a parasite. In connection with the latter theory, many organisms of various sorts have been brought forward and discussed as the causative agents, both in the past and in more recent times, but none of them has received general acceptance as being the causative agent.

THE OCCURRENCE OF MONILIA IN THE FECES, SKIN AND BLOOD OF NORMAL HUMAN BEINGS

As a preliminary to the discussion of the occurrence of *Monilia* in psoriatic patients, it is essential that we have knowledge of their occurrence in and on the normal or nonpsoriatic human being, and so we

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1. Fleisher, M. S., and Wachowiak, M.: Monilia as a Possible Etiologic Factor in Psoriasis, Arch. Dermat. & Syph. **11**:756 (June) 1925.

shall consider first the results of studies of the feces, skin and blood of nonpsoriatic subjects.

We shall use certain terms repeatedly in our discussion, and it may therefore be advisable to define these, as the terms have been used at times by different persons to denote different organisms or groups of organisms. This confusion is unavoidable, since the taxonomy of the lower organisms (bacteria, fungi, algae) is at present not clearly defined; in part because the rational bases for classification are difficult to select, and in part because our knowledge of these organisms is incomplete. Furthermore, a number of different investigators have suggested classifications and methods for classification, many of which possess certain individual advantages, but which by their variety serve to increase the confusion. Our definitions will therefore be simply an attempt to make clear what we have in mind in the use of the particular terms.

Fungi.—Fungi are one of the orders of the vegetable kingdom including single cell organisms, and also complex multicellular organisms in which there is differentiation into various specialized types of tissues. There is a tendency to reproduce by sexual and asexual modes; in some the sexual reproduction is distinct and evident, in some it is abortive, in others it is only suggested and finally it may be entirely absent. These organisms do not contain chlorophyll. Bacteria (*Schizomycetes*) are not included in this order.

Fungi Imperfecti.—These fungi are a group of organisms belonging to the fungi. Into this group are placed such fungi as do not have a full life cycle, or at least fungi in which a full life cycle has as yet not been determined. They produce simple types of spores (such as conidia) but have not been shown to produce the more complex and more distinctive type of so-called perfect reproduction fructifications which play an important rôle in classification of the fungi. They represent a heterogeneous group of organisms, and by many investigators are supposed to be related to *Ascomycetes,* or to be imperfect forms of *Ascomyces* (that is, forms which have lost the power of producing the full life cycle).

Ascomyces.—*Ascomyces* are fungi which usually produce a fixed number of spores (ascospores) with an asc sack (ascus). The ascus represents a so-called perfect fructification, and usually a sexual act precedes the formation of the ascospores. This is an extremely large group of organisms, and includes yeasts, as well as complex and multicellular forms.

Monilia: Monilia is classified by some mycologists as fungi imperfecti and by others as *Ascomyces,* since apparently it corresponds to certain forms in the life cycles of certain *Ascomyces.* The cells are yeastlike, round, oval or oblong; mycelia are produced by most of them,

and these mycelia are composed of a number of cells which are considered to be spores or conidia. They thus form chains of spores (conidia) from which fact they derive their name. At times groups of conidia are found along the chains appearing as whorls of conidia scattered at various places along the length of the mycelium. *Monilia* acts on dextrose or levulose with the production of both acid and gas.

Oospora or Oidia.—These fungi are also considered by some mycologists as fungi imperfecti or as *Ascomyces.* They are closely related to *Monilia* and are similar in morphology. They tend, however, to have more of a square or oblong form with rounded corners. Typically, these organisms produce mycelia which later break up into conidia rather than grow out at first as a chain of cells as does *Monilia. Oospora* or *Oidia,* unlike *Monilia,* do not act on dextrose or levulose with the production of gas; acid may be produced.

(*a*) Feces: In the past the occurrence of *Monilia* or related organisms in the stool of human beings has excited interest, particularly because of the belief stated by a number of investigators that these organisms were related to tropical sprue. *Monilia* is to be found constantly in the feces of patients with sprue, and it followed naturally that those who have studied this condition have also been interested in the occurrence of these organisms in the stools of normal persons. Thus, we find that Ashford [2] reported the presence of *Monilia* in 17 per cent of the cases of gastro-intestinal disturbances which were not clinically sprue and in 3 per cent of feces from normal persons. These figures were obtained in Porto Rico, where sprue is prevalent. In China, Dold [3] found *Monilia* or related organisms in 16 per cent of the cases of diarrhea which were not sprue and in 7.5 per cent of stools from normal subjects. Other observers stated that they found *Monilia* or related organisms in the stools of normal persons—Castellani [4] and Anderson [5]—but did not give the percentage figures, so their data are not definitely serviceable.

In examining a series of 100 stools from various persons (medical students and hospitalized patients not suffering with any apparent gastro-intestinal disturbance), we found *Monilia* present in 6 per cent of the specimens.

In addition, we might add here the results of the study of a series of cases in which gastro-intestinal disturbances were the principal symptoms, and in which there existed a diarrhea of more or less intensity

2. Ashford: Am. J. M. Sc. **150**:680, 1915.

3. Dold, H.: China M. J. **31**:387, 1917; Arch. f. Schiffs-u. Tropen. Hyg. **23**:461, 1919.

4. Castellani, A.: J. Trop. Med. **23**:101, 119 and 133, 1920.

5. Anderson, H. W.: J. Infect. Dis. **21**:341, 1917.

and usually of a considerable duration. In a series of fifty-one such patients whom we have examined, we have found *Monilia* present in 40 per cent.[6]

One would expect the percentage occurrence of *Monilia* in the persons of this group to be distinctly higher than in normal persons, especially since in this series we have included a number of cases of so-called tropical sprue (originating in Mexico or Korea) and some cases in which the condition was diagnosed as sprue which originated within the United States. In all of the fifty-one cases, the stools were sent to us to be examined for fungi imperfecti, so that their presence was at least suspected.

More recently, Garcia showed that by means of the complement-fixation reaction, using an antigen made from *Monilia,* one can satisfactorily determine the presence of *Monilia* in the bodies of human beings; usually the fungi are to be found in the gastro-intestinal tract. His results, with average persons (mostly hospital cases), seemed to show that *Monilia* is present in about 10 per cent of human beings. His results with the complement-fixation reactions have been checked by cultural methods, and there seems to be a definite agreement between the serologic and bacteriologic results.

It appears, then, that *Monilia* may be present in the intestinal canal of from 6 to 10 per cent of normal persons, while it may be found in the feces of from 15 to 40 per cent of patients with intestinal disturbances.

(*b*) Skin: There have been relatively few studies concerning the occurrence of organisms of the type in which we are here interested on the skins of human beings. While Greenbaum and Klauder[7] reported that fungi were found in almost 23 per cent of the 150 normal persons whom they examined, they did not give information which serves to identify the organisms isolated as related to those which we are considering. Indeed, the fact that none of the organisms which they described fermented levulose (according to the table given in their article) seems definitely to differentiate their organisms from *Monilia.*

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6. In an article in 1924 (Am. J. M. Sc. **168**:371), we stated our belief that fungi imperfecti should be considered as potential etiologic agents in many cases of intestinal disturbance associated with diarrhea in which other etiologic agents could not be demonstrated, and we showed the presence of such organisms (*Monilia* and *Oospora*) in the feces in a number of such cases. Since our article appeared we have examined a number of stools in additional cases, and the observations are included in our figures given in this article. However, in these figures we speak only of the occurrence of *Monilia* and omit from inclusion as positive cases those in which *Oospora* were found.

7. Greenbaum, S. S., and Klauder, J. V., Yeast Infestations of the Skin, Arch. Dermat. & Syph. **5**:332 (March) 1922.

It appears probable that *Monilia* was not found on the skin of any of the normal human beings whom they studied.

Our observations were made in a series of twenty-six normal persons, and we were unable to cultivate *Monilia* or similar organisms from the skin (mainly scrapings from the skin of the posterior surface of the arm near the elbow) in any case. As far as one can judge, the studies of Greenbaum and Klauder are in agreement with ours, and *Monilia* is not found on the skins of normal persons.

If one considers the occurrence of *Monilia* in association with various dermatologic lesions, however, one finds that these organisms have been demonstrated with some degree of frequency. Unfortunately in many cases in which organisms, apparently yeastlike, are reported as having been present in dermatologic lesions, the identification of the organisms is woefully incomplete, and in many cases one cannot determine from the description whether or not the author was dealing with *Monilia*.

This is evident in the extensive review published by Shelmire,[8] in which he covered the literature thoroughly; in many of the articles which he quoted the exact nature of the organism dealt with cannot be determined from the original texts.

As stated in an article by Stryker and Fleisher,[9] *Monilia* has been shown to be a causative agent of lesions of the skin by Castellani and Chalmers,[10] Tanner and Feuer [11] and Engman.[12] In the same article, the observers showed that *Monilia* may cause or at least is found in lesions of erosio interdigitalis. Wachowiak and Fleisher [13] demonstrated *Monilia* in pure culture in lesions of epidermomycosis of the sole of the foot in at least one case. Stryker [14] studied the occurrence of fungi in general dermatologic conditions and found on the whole the occurrence of yeastlike organisms of the monilia type to be infrequent in conditions such as eczema. He studied and examined thirty-six cases (seborrheic dermatitis, pompholyx and vesicular eruptions of the hands and feet, epidermomycosis).

It appears that *Monilia* is rarely if ever found in or on the skin of normal persons. However, it as well as other fungi may be causative

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8. Shelmire, B.: Thrush Infections of the Skin, Arch. Dermat. & Syph. **12**: 789 (Dec.) 1925.

9. Stryker, G. V., and Fleisher, M. S.: J. Lab. & Clin. Med. **11**:911, 1926.

10. Castellani and Chalmers: Manual of Tropical Medicine, ed. 3, New York, William Wood & Company, 1920, p. 2092.

11. Tanner, F. W., and Feuer, B.: Cultural Studies on an Infection of the Skin by Endomyces Albicans, Arch. Dermat. & Syph. **1**:365 (April) 1920.

12. Engman, M. F.: Peculiar Fungus Infection of the Skin, Arch. Dermat. & Syph. **1**:370 (April) 1920.

13. Wachowiak, M., and Fleisher, M. S.: Epidermomycosis of the Sole Caused by Monilia and Yeast, Arch. Dermat. & Syph. **13**:815 (June) 1926.

14. Stryker, G. V.: Personal communication to the author.

agents of dermatologic conditions such as erosio interdigitalis and possibly certain types of epidermomycosis. *Monilia* is, according to the studies now available, rarely to be found associated with other dermatologic lesions.

(*c*) Blood: In the literature there is little reference to the occurrence of *Monilia* in the blood of human beings. Wachowiak and Fleisher [15] showed that these organisms may be present in the blood stream in cases in which the organisms were apparently primarily present in the intestinal canal, as in cases of sprue and other conditions in which *Monilia* or related organisms were presumably a factor in the disease. Aside from the report mentioned and possibly some early ones dating from a period previous to the introduction of the present bacteriologic methods, which can therefore be accepted only with considerable hesitation, we do not know of any studies which seem to have shown the occurrence of these organisms in the blood stream of man.

We have searched for these organisms in the blood of normal persons, but we were not able to demonstrate or cultivate the organisms in any case in a series of twenty-four.

The significance of the presence of *Monilia* in the blood stream in cases of sprue or intestinal infection is not entirely clear. Its presence may be due to the fact that we deal with a condition similar to or identical with an actual bacteremia, or its cultivation at the particular time may be due simply to chance. It appears possible that under certain conditions organisms present in the intestinal canal as either pathogenic agents or harmless parasites may enter the blood stream in larger or smaller quantities. They may remain there for varying periods of time, producing, however, no harmful effects in parts of the body distant from the intestine but being gradually taken up and destroyed by various cells, or, on the other hand, they may be spread through the blood to settle in certain parts of the body, there to become agents in the production of lesions.

It appears from our studies and from the literature that *Monilia* is to be found in the feces of normal human beings in from 6 to 10 per cent of specimens examined, and that when intestinal disturbances exist, the percentage of occurrence may be markedly increased, probably exceeding 40 per cent. In or on the skin of normal persons *Monilia* is rarely if ever found. It may be found in certain types of dermatologic conditions, but not in all cases examined. It appears that *Monilia* is not to be found in the blood of normal persons; however, the organisms were found in the blood of a limited percentage of patients in whom it was believed that *Monilia* was related to the disease.

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15. Wachowiak, M., and Fleisher, M. S.: Am. J. Trop. Med. **3**:59, 1923.

OCCURRENCE OF MONILIA IN PERSONS AFFECTED WITH PSORIASIS

Since the publication of our earlier report concerning the presence of *Monilia* in feces, blood and scrapings from the skin of patients with psoriasis, we have examined a large number of additional cases.

In our first series of experiments in which material from about twenty-four persons suffering with psoriasis was examined, we found *Monilia* in the feces of 83 per cent, in the blood in 21 per cent and in scrapings from the skin in 46 per cent.

In our later series, material from an additional thirty-two persons was examined, and again *Monilia* was found in the feces in 90 per cent, in the blood in 10 per cent and in the scrapings from the skin in 29 per cent. In general, this second series confirms the first.[16]

Specimens of Stool Blood and Scrapings from the Skin in Cases of Psoriasis Examined for Monilia

	First Series			Second Series			Total		
							Number Positive		Percentage Positive
	Number Positive	Number Examined	Percentage Positive	Number Positive	Number Examined	Percentage Positive	First Series	Second Series	
Stool.....	19	23	83	19	21	90	38	44	86
Blood.....	5	24	21	1	10	10	6	37	17.5
Skin.....	11	24	46	9	31	29	29	55	36.5

Examination of material from the two series combined showed that *Monilia* was present in the feces of 86 per cent of fifty-six patients with psoriasis, in the blood of 17 per cent and in the scrapings from the skin of 36 per cent.

It will be noted in the accompanying table that the number of cases in which we examined the blood was distinctly smaller than the number in which we examined the feces or scrapings from the skin. We did not obtain and were not able to obtain satisfactory specimens of blood for cultural work, especially in our later series. Furthermore, we felt, as we attempt to show later, that the study of blood cultures in these cases was of secondary importance as compared to the study of the feces and scrapings from the skin.

We call attention to the fact that we were not able to isolate and cultivate *Monilia* in all cases in which we have reported the presence of this organism. Thus, in some cases we were able to demonstrate the organisms only in smears from the original cultures from the skin,

16. Specimens have been obtained from persons attending the St. Louis University Dermatological Clinic, the Dermatological Clinic of Alexian Brothers Hospital and the St. Louis City Hospital, and also through the kindness of Dr. Joseph Gridon, Dr. W. H. Mook, Dr. J. E. Cook and Dr. Hammond of St. Louis, and Dr. A. Strickler of Philadelphia.

blood or stool. This was true once in blood cultures, four times in the cultures from the feces and nine times in the cultures from the scrapings from the skin. Large cocci tended to multiply rapidly, particularly in the last cultures, and if *Monilia* had not grown in considerable numbers within the first thirty-six or forty-eight hours, we usually were not able to isolate this organism. In all cases in which *Monilia* was reported as being present but was not cultivated, the organism had been demonstrated more than once in smears from several culture tubes on different days.[17] We believe, therefore, that we are justified in considering the organism as actually having been present in these specimens, and, further, that we are justified in classifying these cases as positive.

The occurrence of *Monilia* in the stools of persons affected with psoriasis, therefore, is high, certainly sufficiently high to demand thought and consideration. The occurrence of *Monilia* in the skin scrapings is suggestive and worthy of note, and the occurrence in the blood stream is of interest in view of the other observations. We prefer not to consider the possible significance of these observations until we shall have presented our other studies and can discuss them all together.

EXPERIMENTS TO DEMONSTRATE A SPECIFIC RELATIONSHIP BETWEEN THE LESIONS OF PSORIASIS AND MONILIA

In several ways, we have attempted to produce experimentally the lesions of psoriasis through the application or administration of *Monilia* to a number of different animals. For this purpose, we used dogs, rabbits and guinea-pigs, but were not successful in producing lesions identical with those of psoriasis in any of these animals. Possibly we came closer to obtaining a positive result in rabbits than in any of the other animals.

In most of our experiments with animals we attempted to simulate what we thought possibly might be a factor in the relation of *Monilia* to the disease. In practically all the cases which we had examined, *Monilia* was found elsewhere in the patient's body besides in the lesions, and usually it was found in the intestinal canal. We tried to cause the organisms to become more or less permanent parasites within the bodies of the animals by feeding or by intravenous injections. We found, as had others previously, that feeding *Monilia* to rabbits usually led to a temporary lodging of these organisms in the intestine, and that they could be demonstrated in the feces for from three to five weeks after heavy feedings. In order to allow for the possibility that sensitization to

17. It appears in some cases that bacteria tended to outgrow the fungi and inhibit the growth of the latter, particularly in the cultures from the skin. It is possible that in the blood there may be antibodies or harmful substances normally present which inhibit the growth of the fungi.

Monilia might take place through the intestinal wall, we usually allowed from eight to ten days to elapse after the feeding, and before the local application of *Monilia.*

Monilia was applied to denuded areas of skin of the back and sides of rabbits, guinea-pigs and dogs. The animal's skin was usually prepared by shaving, and following the shaving the skin was lightly scarified by means of a sharp scalpel. We attempted as far as possible to avoid drawing blood during the course of the scarification. To the one side we usually applied a forty-eight hour old Sabouraud maltose broth culture of *Monilia,* and rubbed the organisms into the scarified area. To the other side, we usually applied sterile broth with friction, this side serving as a control to show what reaction scarification and friction would bring about.

In dogs and guinea-pigs we did not find any difference between the side to which *Monilia* was applied and the one which served as a control. In both types of animals a rapid healing and restitution to normal occurred; there was little if any scaling, and it was as marked on the control side as on the side to which *Monilia* had been applied. Usually by seven or eight days after the scarification and application of *Monilia,* all evidence of the insult had disappeared.

In rabbits, in general, results were obtained which were similar or identical to those obtained in dogs and guinea-pigs, except that the skin reaction in rabbits was constantly more marked and of considerably longer duration. In two cases there was a suggestion of action by *Monilia.*

Following scarification and friction in rabbits, a reaction occurred at the insulted area which lasted for from ten to fourteen days. Within from twenty-four to forty-eight hours after the application of the organisms, thin crusts and scales formed over the area; usually these lesions showed a progressive diminution in severity, and after about two weeks the skin had been restored to normal. This was the reaction as noted in most rabbits, both when friction only was applied and when in addition *Monilia* was applied.

In the two animals which showed results somewhat different from the majority, the scaling lasted for a longer period than usual, from four to five weeks, and the reaction was also more severe, that is, the scaling was more active. However, the deeper layers of the skin were not affected even in these animals. In cultures taken from these lesions, *Monilia* was demonstrated four weeks after the application. In these two rabbits, *Monilia* was also present in the feces at this time. Unfortunately, in both of these rabbits both sides had been rubbed with *Monilia,* so that we did not have any definitely comparable control in this experiment; however, in rabbits treated at the same time, areas to which

Monilia had been applied and areas which had been only abraded did not show as marked a reaction. We have not succeeded in reproducing lesions of as great severity or of as long duration in other rabbits either with friction alone or with friction plus *Monilia*. These isolated results are therefore suggestive but inconclusive.

We cannot consider, therefore, that it has been possible to reproduce the lesions of psoriasis in lower animals, nor even to produce lesions similar to those of psoriasis by means of the application and administration of *Monilia*.

It is, of course, generally known that a number of dermatologic conditions supposedly due to fungi cannot be reproduced in lower animals, possibly because the requisite biologic or biochemical relations do not exist between the skins of the animals and the particular organisms. Unquestionably, before the relation of *Monilia* to the lesions of psoriasis is finally known, it will be necessary to use experimental animals more closely related to human beings than are the rodents or dogs. Monkeys, of course, should be used, but they were not available at the time.

We have also studied the effect of *Monilia* on the skin of human beings. We first applied killed organisms (killed by heating to 70 C. for one hour) to abraded areas of the skin of the upper arm, but did not note any effect on the reactions or healing of the areas to which *Monilia* had been applied when these were compared to areas which had been only abraded. We then applied the living organisms (in emulsion) to abraded areas of the skin on the external surface of the upper arm. We abraded two areas as nearly equally deeply as possible; these areas were both on the same arm but were sufficiently far apart to avoid transference of the infection. To one area we applied a few drops of a heavy emulsion of living *Monilia*, to the other, a sterile broth. The scarified areas healed fairly rapidly when only broth was applied, and within two weeks practically all signs of the wound had disappeared. On the other hand, when *Monilia* was applied, the healing was slower, and the scab persisted a longer time. After the scab had been detached, a fine scaling and desquamation occurred which continued as a rule up to the fourth or fifth week, and in some cases even up to the seventh week after the application of the organisms. In a few persons, the abraded area to which *Monilia* had been applied was still not normal three months after the beginning of the experiment. In some cases, in the early days after the scarification of the area to which *Monilia* had been applied, it showed a more marked reaction, being redder than the control abraded areas, and having an areola. In the early period also there was considerable itching which, however, was not severe.

We carried out a third series of experiments in which we applied living *Monilia*, *Monilia* killed by heat and living *Bacillus subtilis* to the

abraded areas of the arms of human beings. In this series we also varied the depth of the abrasion.

When the skin was only lightly scarified, so that only the upper layers of epidermis had been removed, no difference was noticeable between the reaction at the three areas. If, however, the scarification was carried out so that a slight oozing of blood-tinged serum occurred, which could readily be stopped by pressure, the area to which living *Monilia* had been applied reacted as we have described, while the two areas to which killed *Monilia* or living *Bacillus subtilis* was applied showed a rapid healing and disappearance of all evidences of lesions.

In five cases, we attempted to cultivate organisms from the desquamated scales of the lesions caused by the application of *Monilia*. These cultures were taken during the fourth week after the application of the organisms. In two of five cases we obtained pure cultures of *Monilia* from the scales.

None of the twenty-one persons who were inoculated in the various tests showed a lesion at the site of inoculation from six to eight months after the experiment, and in all the reaction had ceased after from the eighth to the twelfth week.

Our experiments with human beings then fail to give evidence that the local application of *Monilia* will produce psoriasis. They do, however, seem to give evidence that the application of living *Monilia* to an abraded surface of the human skin will cause an activity of the skin with a faint scaling lasting for from three to seven weeks, while the application of killed *Monilia* or living saprophytic bacteria will not produce a similar effect. *Monilia* does apparently have a brief but distinct irritant stimulative effect on the epidermis of the human being.

HYPERSENSITIVENESS OF PSORIATIC PATIENTS TO MONILIA

We wished by means of local reactions to determine whether the psoriatic patient was hypersensitive to *Monilia,* and desired that normal persons as well as persons affected with nonpsoriatic dermatologic conditions should be tested as controls. We therefore requested Dr. A. Strickler to carry out a series of such tests on psoriatic patients and on other persons. We preferred leaving the interpretation of the results of the skin tests to some one who had no possible *a priori* belief concerning relations of *Monilia* and psoriasis.

The tests were carried out by applying a few drops of emulsion of killed *Monilia* to an abraded area on the upper arm at the insertion of the deltoid muscle.

Forty persons with psoriasis were tested; of these thirty-one showed markedly positive reactions, and in the nine others there was an evident reaction. Thus, 77 per cent showed a marked positive reaction and 100 per cent showed a distinct reaction to the local application of

the organism. In thirty-five nonpsoriatic persons the reactions were marked in fifteen, slight in ten and negative in ten. Possibly in the fifteen nonpsoriatic persons showing a marked reaction, the reaction was of somewhat less intensity than in the thirty-one psoriatic patients showing a markedly positive reaction. It is interesting also that 28.5 per cent of the control group showed a negative reaction, while none of the psoriatic group showed a negative reaction. Only 43 per cent of the control subjects showed a distinct or marked reaction, while 77 per cent of the psoriatic group showed a marked reaction.

The lesions appearing in the so-called marked or distinct reactions were somewhat as follows: The reaction varied from a papule 0.5 cm. in diameter with slight erythema extending about 0.5 cm. beyond the papule, to a papule 1 cm. in diameter with marked surrounding erythema up to 5 cm. in diameter. Only rarely was pustulation noted, a small pustule surmounting the papule. From these appearances, the reactions shaded off to essentially negative ones.

Again, these tests, like the ones in which we attempted to reproduce psoriasis in lower animals, do not give results which can be considered as satisfactory; they leave the relationship of *Monilia* topsoriasis still in question, but the results seem to show that the patients with psoriasis are as a group more sensitive to *Monilia* than persons not suffering with this disease.

TREATMENT OF PSORIASIS BY INJECTIONS OF MONILIA VACCINE

It followed naturally from our observation of *Monilia* in such a large percentage of psoriatic patients that we should attempt the treatment of patients with psoriasis by means of a vaccine composed of killed *Monilia*.

In our earlier therapeutic experiments, we used entirely autogenous vaccines. As we continued our studies, however, and found *Monilia* so constantly present in the feces and also found the types of *Monilia* to be in general similar in all or most cases, we adopted the use of stock mixed vaccines prepared with from six to twelve different strains of *Monilia* which had been isolated from patients suffering from psoriasis.[18] The emulsion of *Monilia* was made to match a standard that we arbitrarily set.

The injections were given subcutaneously in the back, buttocks or arm. The initial dose of the vaccine was 0.1 cc., the dosage was doubled until 1.6 cc. was given; at the next following injection 2 cc. was given, and thereafter the injection of either 1 or 2 cc. of the emulsion

18. In this article we do not plan to consider the biologic characteristics or biochemistry of *Monilia*, preferring to postpone this study and report to a later article, in which we may also consider various other strains and types of these organisms.

was continued. The injections were given at intervals of from four to seven days, or in some cases at longer intervals if severe reactions occurred.

Usually the injections were not accompanied by any reaction, local or general. In only one or two cases were general reactions reported; one of the persons so affected was a child, aged 9 years, in whom psychic factors unquestionably played a part, and in this case the injections had to be discontinued. In one or two other cases occasional mild, general disturbances were noted, such as malaise and headache; chills, febrile reactions and prostration, however, were not reported.

Local reactions were more frequent but, on the whole, were not disturbing factors; as a rule, the injected material was absorbed fairly rapidly without any local induration. At times, induration occurred which lasted for a week, but was not accompanied by pain. In a few cases, a hard painful mass appeared at the site of injection, but in none of these cases was there necrosis and discharge of necrotic material. We can state that only exceptionally did local reactions interfere with the sequence of the injections.

In all, we can report results in thirty-eight cases in which the patients were treated for a sufficient length of time and received a sufficiently large number of injections to warrant judgment regarding the result of the injections of the vaccine. In all the cases here considered at least eight injections of the vaccine were given; all of these patients received several injections of the maximum vaccine dose. The cases varied from those in which there were only limited and localized lesions, usually affecting the scalp, to those in which the lesions were generalized. In all of the cases the disease had been of long standing.

The patients were either private or clinic cases of Dr. J. Grindon, Dr. G. V. Stryker, Dr. W. H. Mook, Dr. W. D. Hammond, Dr. N. Toomey, of St. Louis, or Dr. S. Pollitzer of New York, and were treated by them.

Sixteen of the thirty-eight patients treated with the vaccine showed little if any effect, the majority of these were patients in whom the lesions were limited to the extremities and the scalp, but a few were patients in whom the lesions were diffuse and general. In seven other patients, the reporters noted a slight effect following the injections of the vaccine, but certainly no result that gave satisfaction as far as the patient was concerned. In five additional patients, there was a distinct change in the lesions following the injections, but this change did not progress to practically a complete disappearance of the lesions. In the remaining ten patients, there was a complete or almost complete clearing up of the lesions.

Of particular interest in this last group of patients were a number who had not been free from the rather generalized lesions for several

years, in spite of varied and persistent treatment. In a number of these cases, the change following the injections of vaccine was startling, and the subsidence of the lesions progressed rapidly until only a few small and rather inactive spots remained.

In a number of cases, however, lesions reappeared after the injections were stopped, and in one such case a second course of injections led again to a disappearance of lesions. In other cases new lesions appeared even during the course of the injections. When the injections were followed by any considerable clearing of the lesions, this became evident after a few injections, as early as the fourth and certainly by the eighth.

Pollitzer stated that "there is an effect produced on the lesion; there is a prompt reduction in the infiltration so noticeable that the patients have in every instance volunteered the statement that the patches are 'thinner'." Others who used the vaccine reported similar appearances, and also that the scaling diminished. Usually these partial improvements in the lesions, which did not occur in all cases, were noted by the third or fourth week after the treatment was begun.

The use of the vaccine, therefore, has not been of universal benefit in the treatment of patients with psoriasis. Some patients have shown marked improvement (26 per cent) following injections of vaccine; on the other hand, a large number (42 per cent) have shown little if any improvement following the vaccine treatment. It is possible that we should take into consideration the fact that in a number of these patients in whom improvement was marked, we were dealing with stationary cases of long duration which had been resistant to practically all types of treatment. Weighing heavily against the concept of the value of the vaccine is the fact that lesions reappeared in some cases shortly after the vaccine treatment was discontinued, in a few even during the administration of vaccine.

It may, of course, be suggested that in administering the monilia vaccine we are carrying out protein therapy of only nonspecific character; the possibility that this may be the case cannot be denied. The fact remains, however, that a certain number of patients were markedly benefited by the administration of monilia vaccine.

COMMENT

The results which we have presented do not demonstrate the existence of a specific relation between *Monilia* and the lesions of psoriasis, but they do, we believe, bring out certain relationships which should not be dismissed without further consideration.

Possibly the simplest manner of bringing out the relationship is by presenting briefly the ways in which the experiments reported seem

to fall short of demonstrating a specific relation between the organisms and the disease. These may be summarized as follows:

1. Failure to find *Monilia* in every case of psoriasis in the feces, blood and skin.

2. Failure to reproduce psoriasis in lower animals and possibly in human beings by inoculation of *Monilia*.

3. Failure to obtain 100 per cent of marked skin reactions (local) in psoriatic patients, and the obtaining of marked skin reactions in a number of nonpsoriatic patients.

4. Failure to obtain more constantly a disappearance or diminution of lesions following the use of a monilia vaccine in treatment.

Against these negative facts, however, can be set the following suggestive facts: (1) the frequent observation of *Monilia* in the stool of persons affected with psoriasis; (2) the observation of *Monilia* in scrapings from the skin in a fair percentage of the cases examined; (3) the continued desquamation following the application of *Monilia* to abraded surfaces of the skin of normal human beings; (4) the marked clearing of lesions in certain cases of psoriasis following the injection of the vaccine and (5) the "thinning and paling" of the lesions following the injections of vaccine.

In discussing both the positive and the negative observations, it seems advisable not to consider them separately, since they are simply different aspects of the identical experimental data, and for convenience we prefer to consider them all under four negative heads.

(a) We found *Monilia* present in the feces of psoriatic patients in 83 per cent of the cases examined, whereas in normal persons it was found in only about 10 per cent of the cases, and in persons suffering with some type of intestinal disturbances it was present in 40 per cent. Possibly in the feces of patients with pernicious anemia one finds *Monilia* present in as large a proportion of cases as we do in psoriasis, but at least as far as we know at present these are the only two diseases in which such conditions exist. It seems scarcely necessary to call attention to the fact that even in diseases in which particular organisms are acknowledged as being the causative agents, the causative agents in 100 per cent of cases have not been isolated. It is certain that in the cultures *Monilia* is occasionally overgrown by other organisms present in the feces, and one must recognize the fact that methods for isolation of these fungi have not as yet been perfected; thus, it is possible that *Monilia* was present in a number of specimens in which we were not able to demonstrate it either culturally or microscopically, and are therefore here grouped as negative cases.

Finally, it seems improbable that such a frequent, almost constant, occurrence of *Monilia* in the feces can be considered as unrelated to

the particular condition with which it is associated, regardless of what the exact nature of the relationship may be.

(b) The relative infrequency of the observation of *Monilia* in the blood stream of psoriatic patients does not to our minds actually bear on the potential relationship between these organisms and the disease. We do not believe, judging from our experience with blood cultures in other conditions in which *Monilia* may be present in the feces, that the presence of *Monilia* in the intestinal tract leads to the constant presence of *Monilia* in the blood stream. We are inclined rather to believe that our observations of *Monilia* in the blood were simply chance occurrences; and that *Monilia* does from time to time, with greater or less frequency, get into the blood stream from the intestinal canal, circulates there for a short time and then disappears. If such is the case, we could scarcely expect constant results in cultivating *Monilia* from the blood.

It is possible, however, that there may be a relationship between the psoriatic lesions and the presence of *Monilia* in the blood stream; for we may consider as a possibility that the lesions of the skin are the result of the lodgment of these organisms in the skin capillaries in particular parts of the body; possibly the lesions of psoriasis may represent a hematogenous infection.

(*c*) The failure to cultivate *Monilia* from a large percentage of the scrapings from the skin from psoriatic patients tends to weaken the theory that a specific relationship exists between the disease and the organisms. One should bear in mind, however, what we have stated previously in discussing *Monilia* in the feces, namely, that our methods for isolating *Monilia* from mixed cultures of organisms were at present not completely satisfactory. In spite of using Sabouraud's mediums in either liquid or solid form, we find that a number of organisms (cocci and bacilli, both gram-positive and gram-negative organisms) grow rapidly and luxuriantly. We experimented with mediums of various p_H (from p_H 3 to p_H 9), but found that while Monilia grew well in mediums of p_H 5.5 and slightly at p_H 3.5, the other organisms (in particular in the skin cultures a rather large gram-positive irregularly arranged coccus) grew equally well. We used stains as bacteriostatic agents, but these also did not give satisfactory results. We attempted to use selective mediums of various composition, but did not succeed in developing one to serve our purpose. We believe that the fact that we were able to demonstrate *Monilia* in a number of cases in the smears from cultures, even though in these cases we were not able to cultivate them, makes it possible that in still other cases *Monilia* was present (possibly in small numbers), even though we could not either demonstrate or isolate it. In brief, our technic, admittedly imperfect, may

be responsible for our failure to demonstrate *Monilia* in a larger percentage of cases. It is further possible that *Monilia* may have been destroyed in situ after first lodging in the skin and initiating the lesions, or the organisms may have been changed sufficiently to interfere with their growth on artificial mediums.

2. Our failure to reproduce the lesions of psoriasis either in lower animals or in human beings suggests rather that *Monilia* does not bear an etiologic relationship. We believe, however, that one should bear in mind the fact that in a number of diseases occurring in human beings it has been found difficult or impossible to reproduce the clinical symptoms in most laboratory animals through the activity of the recognized causative agent, and in some cases it has been impossible to reproduce the disease in any laboratory animals; in other cases it has been possible to reproduce the disease only by special methods. In spite of the inability to fulfil this portion of the postulate of Koch, therefore, in many cases we accept bacteria as the specific agents of disease. We believe it only fair to recognize the fact that inability to reproduce a disease by means of a particular organism does not of necessity exclude that organism from consideration as a causative agent.

We believe also that one should bear in mind the fact that in at least two of the rabbits used in our experiments reactions developed which suggested an irritant effect of *Monilia* on the skin of these animals. Furthermore, the results of the application of *Monilia* to the skin of human beings certainly show that these organisms if applied to the deeper layers of the human skin cause an irritation and hypertrophy of the epidermis which may be of considerable duration. Again, we are inclined to believe that these results cannot be thrust aside as absolutely immaterial.

The results of the tests for sensitiveness to *Monilia* are not clearcut. Theoretically, the nonpsoriatic persons should have given negative reactions. It is probable, however, that any person who harbors *Monilia* in the intestinal canal or elsewhere in his body will react to the local application of these organisms; this seems all the more likely since Garcia,[19] as mentioned before, found that the blood of practically all persons who harbor *Monilia* in their bodies will give a positive complement-fixation reaction with a monilia antigen. The presence of antibodies against *Monilia* would certainly suggest that a local reaction might occur. It has been shown that from 6 to 10 per cent of normal persons harbor *Monilia* in the intestinal canal; further, it has been shown that in a number of dermatologic conditions *Monilia* is present probably as a causative agent. Possibly, these facts will account for at least a portion of the positive reactions in the nonpsoriatic persons.

19. Garcia: Personal communication to the author.

3. The vital point, however, seems rather to be that 100 per cent of the patients with psoriasis showed positive reactions, and that 77 per cent of these (those showing marked reactions) showed reactions which were more severe than the reactions noted in the nonpsoriatic group.

Evidently, all psoriatic patients, at least as far as tested by Dr. Strickler, were hypersensitive to the emulsion of the organisms even though this hypersensitiveness (as was to be expected from mycologic cultural studies and from studies of complement-fixation) was not confined to psoriatic patients.

4. Frankly, we do not believe that the relationship of a particular organism to a particular disease should be measured by the possibility of the organism, its products or antibodies obtained against the organisms, serving successfully as curative agents for the disease. Actually, many diseases concerning which we know or accept specific micro-organisms as the causative agent are not curable by the organism, its products or any antiserums.

The fact remains that in a number of patients, practically one fourth of those treated, who had previously been subjected to many types of treatment, and in whom the lesions had been stubbornly present for a number of years, an almost complete clearing of the lesions occurred following the injection of the vaccine. It is true that this may have been a coincidence, but, on the other hand, it appears to us to be suggestive when considered in connection with our other observations.

Whether the startling results obtained in some cases and the thinning of the lesions and lessening of scaling noted in a number of cases can be laid to a specific effect of the vaccine, or whether we deal with a nonspecific effect such as might be and has been produced by nonspecific protein agents, as by the use of typhoid or staphylococcus vaccine, we cannot and do not venture to state.

CONCLUSION

At the end of all these considerations, we still retain a belief that *Monilia* is in some way related to psoriasis, even though our experiments have not served to show the relationship beyond question as to either its actual existence or its nature. We cannot conceive that organisms which normally are present in not more than 10 per cent of persons should be found so frequently in psoriatic patients without some more or less definite relation existing between the organisms and at least certain aspects or phases of the disease; we do not see how we can put aside entirely the results of our cultural studies concerning the feces and the scrapings from the skin. Possibly no other of our observations would appear to weigh so heavily as these, but the others seem at least to add support to the cultural studies.

The question may arise as to the possibility of *Monilia* being considered as a causative agent of disease. While it is quite true that it does not rank as a highly virulent organism, there is no question of its pathogenic action in some cases. Thus, it has long been recognized that *Monilia* was a causative agent of thrush; a number of investigators have claimed that *Monilia* is an important factor in causing sprue; *Monilia* has been accepted as an agent causing bronchitis and pneumonia, and it has been shown to be a causative agent of erosio interdigitalis and epidermomycosis. Certainly, it cannot be denied that it might also be considered a causative agent of psoriasis.

The mechanisms by which *Monilia* might act in causing psoriasis are various. In our earlier preliminary publication we suggested that if *Monilia* is a causative agent in psoriasis, it possibly first lodges in the intestinal canal, then a general sensitization results by absorption of the organisms or their products, and that the local lesions are the result of lodgment of *Monilia* in previously sensitized skin. As an alternative we would suggest that possibly the lesions may be the result of a hematogenous infection with lodgment of the organisms in the capillaries of the areas of predilection; here local or general sensitization may play no part, and only the chance entrance of *Monilia* from the intestinal canal into the blood stream and the local condition in the skin (nutritional or vascular) would lead to the appearance of the lesions.

It may be that *Monilia* does not represent a primary factor in connection with psoriasis but is only a secondary factor, or possibly even only a concomitant parasite associated with some other actual causal factor. Thus, it may be that another factor either constitutional (metabolic or related to the glands of internal secretion) or infectious, plays a primary rôle in psoriasis, but that infection with *Monilia* is superimposed on this primary condition and *Monilia* acts as a factor in continuing the lesions. Or again, it might be possible that the factor or factors which actually cause psoriasis also bring about or are associated with conditions in the body, possibly particularly in the intestinal canal, which permit *Monilia* to lodge in and become a permanent inhabitant of the intestines. In this case, of course, *Monilia* might not be actually related to the disease and would play possibly no causal rôle in the production of lesions. In this case it would be difficult to explain the presence of *Monilia* in the scrapings from the skin.

Which of these various possibilities concerning the relationship of *Monilia* to psoriasis is correct we cannot at present state, and we do not believe that our studies permit of a selection of any one of these possibilities.

SCLEREMA NEONATORUM

REPORT OF A CURE BY X-RAY THERAPY *

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I am reporting this case primarily because sclerema neonatorum is a rare disease and also because in a search through all the available literature I could not find a report either of the use of x-ray therapy or of a cure by x-ray therapy in this disease.

REPORT OF CASE

History.—A boy, aged 8 weeks, born of Jewish parents in the United States, was admitted from the pediatric clinic to the service of Dr. Abramowitz, in the Israel-Zion Hospital of Brooklyn on Sept. 14, 1926.

The mother was 38 years of age and had been married seventeen years. She had had five children, all of whom were living and well. There was no history of premature births or miscarriages. The Wassermann reaction was negative. The father had tuberculosis of the lungs and was in a sanitarium under treatment.

The infant was born on July 22, 1926. The delivery was normal and spontaneous. The weight at birth was 8 pounds and 13 ounces (3,978 Gm.). The placenta was expelled intact; there were no infarcts or calcifications; the weight was 650 Gm. The coagulation time was five minutes. An erythema was noted as a heat rash.

When 2 weeks old, the infant was admitted to the pediatric clinic. His weight was 3,950 Gm. He was breast fed every three hours. There were greenish stools three times daily. He did not vomit or cough. He slept poorly. The Wassermann reaction was negative. There was a rash on the face, arms and chest. The head and the umbilicus were normal.

On Aug. 18, 1926, the general condition of the patient was improved. The pediatrician noticed that both buttocks were indurated, and he referred the patient to the dermatologic service; however, the patient was not brought for examination until September 14.

Examination.—The infant was fairly well nourished and weighed 4,850 Gm. The temperature was normal. The head was thrown back and held stiffly; the back was rigid with a tendency toward lordosis; the legs were held almost straight and stiffly. Flexing the thighs on the abdomen caused the baby to cry; otherwise he was quiet.

The skin was a deep purplish red and on pressure turned livid. It was slightly raised, tense, smooth and unwrinkled, and showed dilated capillaries. The areas were sharply defined. This condition began at the level of the first lumbar vertebra, involved the entire surface of the lower part of the back and buttocks, and extended over the right and left thighs posteriorly. The popliteal spaces were clear. The calves of both legs were also involved. There was an oval patch over the triceps muscle of the left arm. The abdomen, anticubital spaces

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* From the Dermatological Department of the United Israel-Zion Hospital.

and scrotum were not involved. The skin was not depressible on palpation, nor could it be folded or wrinkled. The tissues seemed indurated and boardlike over the affected areas. The cervical and inguinal glands were slightly enlarged. There was an erythematous rash with fine scales on the scalp, face and chest. The scales on the scalp were slightly greasy. The skin was dry and rough. The condition was diagnosed as infantile eczema.

Treatment and Course.—The mother was told to apply a 2 per cent solution of salicylic acid in olive oil twice daily.

Sept. 20, 1926: The patient was presented before the Brooklyn Dermatological Society[2] with the diagnosis of sclerema neonatorum. All the members agreed with the diagnosis.

Sept. 22: At the suggestion of one of the members of the society, the patient was sent to the x-ray department for a roentgenogram of the entire body to determine whether the diagnosis of myositis ossificans could be ruled out. There was some misunderstanding, and the patient received x-ray therapy instead. One third of an erythema skin unit was given over the back, buttocks, dorsum of the thighs and calves. The patient was irradiated for sixty seconds at a distance of 10 inches with a milleamperage of 5. A 7 inch spark gap was used.

Sept. 25: The infant showed evidence of an infection of the upper respiratory tract and a rectal temperature of 102 F.

Sept. 29: The infant was improved. His weight was 5,250 Gm.

Oct. 2: The report of the x-ray examination by Dr. Wasch stated that the body, pelvis and lower extremities were roentgenographically normal. Deposits of lime salt could not be demonstrated in the subcutaneous or muscular tissues.

Oct. 11: The condition did not seem to spread, and the patient was improving. The skin over the thighs and back seemed somewhat softer. The mild erythema from the initial treatment had disappeared, and only a slight pigment remained. The patient was given another exposure over the same areas.

Oct. 18: The condition improved. His weight was 5,678 Gm.

Nov. 1: There was marked improvement. His weight was 6,428 Gm. The outer aspects of the thighs and left leg were essentially involved. Another x-ray treatment was given.

Nov. 15: The patient was presented to the Brooklyn Dermatological Society[2] to show results of treatment. The skin was freely pliable and could be folded and wrinkled. The induration was markedly decreased, and the condition remarkably improved.

Nov. 29: His weight was 6,950 Gm.; there was slight roughening of the skin of the left arm and shoulder posteriorly.

Dec. 20: His weight was 9,000 Gm. There was a condition of bilateral otitis media following rhinopharyngitis of two weeks' duration; also a slight stiffness of the skin of the buttocks and thighs, but it could be rolled easily between the fingers.

Jan. 18, 1927: The patient's condition was good. There was still a thickening of the skin of the legs and thighs laterally toward the extensor surfaces. The right and left legs were irradiated.

Feb. 15: The skin was softer and easily wrinkled. There was diaper dermatitis of the buttocks and thighs.

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1. Skeer, J.: Sclerema Neonatorum, abstr., Arch. Dermat. & Syph. **15**:351 (March) 1927.

2. Abramowitz, E. W., and Skeer, J.: Sclerema Neonatorum, Arch. Dermat. & Syph. **5**:515 (April) 1927.

April 26: His condition was excellent. There was a slight thick feeling of some areas on palpation.

Sept. 20: The child seemed to be in good condition and well nourished. The skin was soft; apparently, he was cured.

March 10, 1928: The weight was 13,600 Gm. The left buttock was less developed than the right. Both buttocks had natural creases, dimples, and skin that could be folded easily. The skin over the areas that were affected was slightly tense but wrinkled naturally, did not pit on pressure and could be picked up and rolled between the fingers.

This child began to walk when 13 months of age.

COMMENT

Sclerema neonatorum is a disease of infancy and is exceedingly rare. The literature is replete with cases of this disease, since it was first described by Underwood [3] in 1784; but as Gray [4] stated, the literature is most conflicting and confusing. Sclerema neonatorum must be differentiated from edema neonatorum and scleroderma. Lieberthal [5] described and differentiated these conditions admirably. Gray divided sclerema neonatorum into two classes. The class described in this paper is the more typical one. There is a gradual but increasing process of solidification of fat, which almost invariably commences the first few days of life. The infants appear healthy and do not have a subnormal temperature. The second type of case seems to occur in weakly, premature or marasmic infants or in those who are more or less moribund from some severe wasting disease, especially from epidemic gastro-enteritis.

Histologically, Ormsby [6] stated, the chief changes are noted in the corium and hypoderm, in which the connective tissue is contracted and the adipose tissue contains an abundance of fatty acid crystals.

Gray found a marked thickening of the trabeculae between fat lobules. Masses of fibroblastic cells, numerous giant cells, groups of lymphocytes and a few leukocytes could be seen invading the surrounding fat lobules and between the fat cells. The spaces of some of the empty fat cells appeared to be bridged across by strands of protoplasm, leaving narrow clefts between the strands which contained acidular crystals.

Gray, in his paper read at the Golden Anniversay meeting of the American Dermatological Association at Philadelphia in May, 1926,[4] showed some excellent photomicrographs and sections.

Numerous hypotheses have been proposed as to what is the nature of the fat changes. Langer [7] said that the oxidation of olein occurs,

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3. Underwood: Dis. of Child., 1784, p. 76.

4. Gray, A. M. H.: Sclerema Neonatorum, Arch. Dermat. & Syph. **14**:635 (Dec.) 1926.

5. Lieberthal: J. Cutan. Dis. **29**:36, 1918.

6. Ormsby: Diseases of the Skin, Philadelphia, Lea & Febiger, 1927.

7. Langer: Wein med. Presse. **22**:1375, 1881.

resulting in an increase in temperature, which is responsible for the hardening of the fat. Knopfelmacher [8] said that sclerema is due to (1) loss of fluidity of the subcutaneous fat, (2) lowering of the body temperature, and (3) the high temperature of solidification of the fat of infants.

Thiemich [9] stated that there is no significant difference between the iodine values of sclerematous infants of the same age, and that it was mere assumption that olein was more readily oxidized than the saturated acids. Seigart [10] agreed with Thiemich.

Miura [11] concluded that the fat of scleremic infants did not differ from that of normal infants of the same age.

Sarvonat [12] maintained that neither the body temperature nor the oleic acid content would explain the hardening of the tissues, while two years later Bayer [13] decided that a pathologic reduction of the oleic acid was the cause of sclerema.

Finkelstein and Sommerfeld,[14] as a result of work on five cases, suggested that the disease was due to some change in the colloids of the subcutaneous tissue.

In an analysis of five cases, Channon and Harrison [15] observed that the melting point of fat was greater in sclerematous infants than in nonsclerematous infants of the same age. The iodine values of sclerematous fat, although somewhat lower than the iodine values of normal fat, were not of great significance and did not provide much evidence in favor of the hypothesis of diminished olein. If 3 per cent of palmitin is added to normal fat tissue, the melting point is raised 8.9 degrees. If 3 per cent olein, present in fat of iodine value 65 and saponification value 200, were replaced by 3 per cent palmitin, the resulting iodine value of the fat would be 62.4 and its saponification value 200.5, and there would then be a definite rise in the melting point. The authors concluded that the anisotropic crystals were probably neutral fats, either palmitin or stearin, or both, or glycerides of higher fatty acids.

With few exceptions, most of the authors seem to agree that certain changes take place in the fat, but what actually causes these changes is an open question and will have to be investigated further.

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8. Knopfelmacher: Jahrb. f. Kinderh. **45**:177, 1897.
9. Thiemich: Ztschr. f. phys. Chem. **26**:189, 1898.
10. Seigart: Beitr. z. chem. Phys. u. Path. **1**:183, 1902.
11. Miura: Japan Ztschr. f. Dermat. u. Urol. **5**:412, 1905.
12. Sarvonat: Arch. de méd. d. enf., **9**:22, 1905.
13. Bayer: Verhandl. d. deutsch. path. Gesellsch. **12**:305, 1908.
14. Finkelstein and Sommerfeld: Monatschr. f. Kinderh. **25**:105, 1923.
15. Channon, H. J., and Harrison, G. A.: Biochem. J. **20**:84, 1926.

METHODS OF TREATMENT

Sutton,[16] Pollitzer,[17] Ormsby,[6] and Holt [18] advised artificial heat in its several forms.

Pisek [19] suggested hyperdermic injections of from 2 to 3 ounces of normal physiologic solutions of sodium chloride every six hours.

Bourne [20] claimed good results following the administration of thyroid extract (0.004 Gm.) daily and irrigations of the bowel with weak solutions of sodium bicarbonate.

Stokes [21] and Pollitzer observed cures following mercurial inunctions.

Nash [22] reported a case in which the patient was treated with 1 grain (0.065 Gm.) of mercurial powders three times a day for three and a half months.

Pernet [23] treated two patients with 1 grain (0.065 Gm.) of powdered mercury and chalk three times daily after meals with good results.

Abramowitz and Skeer [24] reported this case, in which the patient was cured by x-ray therapy. No other medication was given. The patient received approximately one third of an erythema dose every three weeks.

It is difficult to explain just what action the rays have on the tissues. Numerous investigators have shown that radiations act on the higher fatty acids. Others have tried to prove that the radiations activate the autolytic enzymes. It is possible that radiations activate the enzymes so that a molecular change is brought about in the fat cells, causing the fat to undergo resorption.

441 Ocean Ave.

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16. Sutton: Diseases of the Skin, St. Louis, C. V. Mosby Company, 1926, p. 539.

17. Pollitzer, S., and Darier, J.: Text Book of Dermatology, Philadelphia, Lea & Febiger, 1920, p. 347.

18. Holt: Diseases of Infancy and Childhood, New York, D. Appleton & Company, 1909.

19. Pisek: Diseases of the New-Born, Sajous **7**:34, 1920.

20. Bourne, E.: Lancet **1**:368 (Feb.) 1922.

21. Stokes: Modern Clinical Syphilology: Diagnosis, Treatment, Case Studies, Philadelphia, W. B. Saunders Company, 1926, p. 1054.

22. Nash: Brit. M. J. **1**:829 (May 10) 1924.

23. Pernet: Brit. J. Child Dis. **36**:29 (Jan.) 1918.

24. Abramowitz and Skeer, in MacKee, G. M.: X-Ray and Radium in the Treatment of Diseases of the Skin, Philadelphia, Lea & Febiger, 1927, p. 712.

THE WASSERMANN REACTION

AS A ROUTINE TEST IN HOSPITAL PRACTICE *

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In presenting these statistics before the medical profession at large, we fully realize the relatively slight value that such statistical analyses afford. Statistics, as a whole, are misleading, but it is our purpose to impress the medical profession with the value of routine Wassermann reactions, in both office and hospital practice.

Before presenting statistics as to the frequency of syphilis in the Swedish Hospital, a review will be given of some of the literature. Before the Wassermann reaction was introduced, there was but little index as to the prevalence of syphilis in communities, in hospitals or among various classes of people. It has always been considered a common disease, but an approach to exact figures was neither available nor possible, especially in the United States. With the advancement of a more reliable means of diagnosis by laboratory methods, the ideas of the medical profession on this subject have been revolutionized.

REVIEW OF THE LITERATURE

Formerly, the estimate of the prevalence of this disease was extravagant, and neither authority nor proof was offered to substantiate the opinion advanced. Neisser [1] believed that 12 per cent of the population of Berlin was syphilitic. Fournier [2] considered 15 per cent of the Parisians to be syphilitic, and Hazen,[3] in America, held that 10 per cent of the people were infected with the disease. A few years previously, Fischer [4] estimated that 18 per cent of the population of this country had syphilis and that 250,000 deaths occurred yearly as a result of venereal disease.

Many surveys have been made in all types of communities and institutions regarding the prevalence of syphilis, and the literature abounds in such reports. Perhaps Vedder [5] collected the greatest amount of statistics on this question, and the reader is referred to his

* Submitted for publication, Sept. 4, 1928.

1. Neisser, in Oxford Medicine, vol. 5, 1921, p. 658.
2. Fournier, in Oxford Medicine, vol. 5, 1921, p. 658.
3. Hazen: Syphilis, St. Louis, C. V. Mosby Company, 1919, p. 23.
4. Fischer: Municipal Control of Venereal Diseases, Pub. Health Mich. 8:51, 1913.
5. Vedder: Syphilis and Public Health, Philadelphia, Lea & Febiger, 1918.

work for a detailed analysis of the prevalence of the disease, both in the United States and in other countries.

Among reports made from hospitals in this country where the Wassermann reaction was employed in 6,000 tests at the Harvard Neuropathological Laboratory, Southward [6] found that 23 per cent of the patients gave positive reactions. Hammond [7] applied the test to patients and employees at the New Jersey State Hospital and found 6.3 per cent to be syphilitic. Thompson [8] made 1,000 tests in the Arkansas State Hospital for Nervous Diseases and found that 33 per cent of the patients gave positive reactions. In 5,106 cases at the Philadelphia General Hospital, Rosenberger,[9] in 1916, found 27.4 per cent syphilitic; again, in 1917, he repeated his work [10] and found the percentage to be 25.9. The general average for the two years, embracing over 10,000 cases studied, was 26.45 per cent. In 477 obstetric cases at the University of Michigan Hospital, Peterson,[11] found 5.8 per cent of the patients to be syphilitic, and in 606 gynecologic cases, found evidences of syphilitic infection in 8.2 per cent. Williams,[12] at Johns Hopkins Hospital, found an average of 11.2 per cent of the patients in the obstetric wards to be syphilitic; of these, 16.29 per cent were black, and 2.48 per cent white women. Keidel and Moore,[13] reporting the results from the medical wards from the same hospital, found 5 per cent of the patients in the white private wards (7.6 per cent in the white public wards) and 22.9 per cent in the colored public wards to be syphilitic.

Detweiler's [14] survey is interesting. During a period of ten years at the Toronto General Hospital, he found that an average of 6.4 per

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6. Southward: Statistical Notes on a Series of 6,000 Wassermann Tests for Syphilis Performed in the Harvard Neuropathological Laboratory, 1913, Boston M. & S. J. **170**:947, 1914.

7. Hammond: Statistical Study in Syphilis with the Wassermann Reaction, etc., Am. J. Insan. **70**:107, 1913.

8. Thompson: Syphilis, Diagnosis and Treatment, Philadelphia, Lea & Febiger, 1916, p. 27.

9. Rosenberger: Summary of the Wassermann Tests Done During 1916 in the Philadelphia General Hospital, New York M. J. **105**:1233, 1917.

10. Rosenberger: Ten Thousand Wassermann Tests, New York M. J. **108**:584, 1918.

11. Peterson: A Plea for Routine Wassermann Examinations for Obstetrical and Gynecological Patients in Hospitals and General Practice, Am. J. Syph. **1**:211, 1917.

12. Williams, J. W.: Wasserman Reactions in Obstetrics, Bull. Johns Hopkins Hosp. **31**:335, 1920.

13. Keidel, A., and Moore, J. A.: Wassermann Reactions in Johns Hopkins Hospital, Bull. Johns Hopkins Hosp. **34**:16, 1923.

14. Detweiler, H. K.: Survey of Results of Routine and Other Wassermann Tests in Toronto General Hospital for Past Ten Years, Canad. M. A. J. **16**:800, 1926.

cent of the patients were syphilitic. In 1916, the percentage was 10.4; then it gradually declined, during ten years, to 5.8 per cent. The result for each of the last five years was less than the general average (table 1).

Whether this decline is due to a gradual decrease in the prevalence of syphilis or not is doubtful. Of greater probability is the fact that the Wassermann reaction is more reliable under recent methods. The decline may also be due to a gradual elimination of the old, long-standing

TABLE 1.—*Detweiler's Statistics on the Prevalence of Syphilis at the Toronto General Hospital*

Year	Total Number of Patients	Positive Cases of Syphilis	Per Cent
1916 (October 13 to December 31)	800	83	10.4
1917	3,869	385	9.95
1918	3,389	201	5.9
1919	2,111	185	8.8
1920	2,814	255	9.0
1921	3,609	228	6.3
1922	3,389	171	5.0
1923	3,554	222	6.2
1924	4,042	227	5.6
1925	4,207	246	5.8
Total	27,115	1,735	6.4

TABLE 2.—*Vedder's Statistics on Syphilis from Army Records*

Survey	Total Examined	Known Cases of Syphilis, per Cent	Positive Wassermann Reactions, per Cent	Undoubted Cases of Syphilis, per Cent	Weak Wassermann Reactions, per Cent	Estimated Cases of Syphilis, per Cent
Recruits	1,019	0	7.75	7.75	9.02	16.77
Cadets	621	0	2.57	2.57	2.89	5.46
White enlisted men	1,577	3.44	4.77	8.21	7.87	16.08
Colored enlisted men	1,472	1.08	21.8	22.21	13.11	35.00
Porto Rico regiment	531	13.55	28.58	42.37	13.55	55.93
Military convicts	1,145	6.48	9.50	15.98	5.67	21.65
Insane soldiers	567	3.51	8.29	11.80	7.41	19.21
Tuberculous soldiers	229	7.56	15.72	23.28	15.72	39.00
Soldiers' Home	1,171	11.62	13.40	25.02	9.73	34.75

cases of syphilis, and a more widespread knowledge of prophylaxis and the value of prompt treatment in the younger generation.

There is no better place, however, to study the prevalence of syphilis in a group of persons from all stations and strata of society than the army. The test is routine and the records and data are accurate. For this information, we again refer to Vedder [15] who, in 1915, published his observations. The figures in table 2 are most interesting, from many angles. Of the 1,019 recruits, practically 8 per cent gave a four plus Wassermann reaction. It should be noted that these men had had a rigid physical examination, and had there been any suspicion of their being syphilitic they would not have entered the ranks. Furthermore,

15. Vedder: U. S. War Dept. S. G. O. Bull. no. 8, p. 60.

if 9.02 per cent, representing that group in whom the Wassermann reaction was three plus, is added to the percentage for those with a four plus reaction, the total of syphilitic recruits in whom the condition had not been diagnosed and who apparently did not present any physical signs of syphilitic infection is 16.77 per cent.

The recruits from whom these figures were prepared were from New York and Ohio. Vedder's deduction from his survey was that 16.77 per cent of the young men in civil life, between the ages of 20 and 30, are syphilitic. He added, as a private opinion, that he had good cause to believe that the figure is really at least 20 per cent. Craig [16] corroborated these statements; his figure was 8.64 per cent for young men in civil life, between the ages of 20 and 30. This percentage does not contain the weak positive—only total inhibitions (four plus)—but if the partial inhibitions are added, along with the percentage of syphilitic persons rejected because of the disease, the percentage would have been as high as Vedder's. This figure seems enormous, but it has been borne out in the larger hospitals and by various other surveys.

Special attention is called to the West Point cadets, young men from the great middle class of people, who must be well educated in order to pass the rigid entrance requirements of the academy: 3 per cent of these students gave positive reactions. Craig [17] expressed the belief that if routine Wassermann tests were made on freshmen entering the colleges 3 per cent of these students also would give positive reactions. Vedder agreed with Craig.

The colored race presents a higher figure than the white race. Every survey that has been made of the negroes has proved this. Belding and Adams [18] found the incidence of syphilis in negroes to be twice as great as that in the white race. The figures quoted from Johns Hopkins Hospital by Williams and Keidel and Moore substantiate this belief.

Vedder's results with the Wassermann test in tuberculous patients prove interesting and highly instructive, especially in view of the prevalent erroneous opinion that the presence of tuberculosis will cause a positive Wassermann reaction. He demonstrated that a much larger percentage of tuberculous persons gave positive reactions than of those with any other disease. His figure was 23.28 per cent for the 229 cases tested, and his results were identical with those of Letulle, Bergesin and Lepine,[19] in Paris, who found that one of every five tuberculous

16. Craig: The Wassermann Test, St. Louis, C. V. Mosby Company, 1918, p. 167.

17. Craig (footnote 16, p. 168).

18. Belding, D. L., and Adams, C. B.: Wassermann Reactions in a Boston Maternity Hospital, Boston M. & S. J. **187**:815, 1922.

19. Letulle, Bergesin and Lépine: La réaction de Wassermann chez les tuberculeux pulmonaires, Bull. Acad. de méd., Paris **71**:596, 1914.

patients also had syphilis. Craig [20] examined 166 tuberculous patients in a general hospital in Ft. Bayard, and found 10 per cent of them to be syphilitic, in addition to 6 per cent who were already known to be syphilitic, giving a total of 16 per cent. These figures are not as high as Vedder's, but they amply prove the frequent association of the two diseases. Thus, one may expect a large percentage of the tuberculous patients to be syphilitic, especially in the army. Our own observations on the 17,132 Wassermann reactions in this hospital did not show any positive reactions in tuberculosis, unless syphilis was also present.

It is difficult to analyze the figures on syphilis from the American expeditionary forces. Walker [21] collected a mass of valuable data, which might be briefly summarized. The total number of venereal infections in the American expeditionary forces from Aug. 29, 1918 to Oct. 8, 1919, was 41,470, of which 4,168, or 10 per cent, were syphilitic. The total number of men examined is not stated, and until these statistics are worked out in more detail, but little information can be gleaned.

In the American armies of occupation in the Orient, the rate is higher. Houke [22] examined 1,158 men in China, and found 156 to be on the syphilitic register. Eleven, or 1 per cent more, were found to be syphilitic by the Wassermann reaction. The total percentage was 14.5. The reason for this high rate, as explained by Houke, is the low charge of prostitutes in China. He believed that nearly 90 per cent of the men contracted the disease from that source; both Vedder and Walker expressed the belief that prostitutes are from 80 to 90 per cent syphilitic. If they continue long in their venery, they eventually become infected 100 per cent.

STATISTICS ON SYPHILIS FROM THE SWEDISH HOSPITAL

The Swedish Hospital is an institution with 168 beds, and has comparatively few charity or reduced rate accommodations. Thus, the patients are of a higher class than those admitted to most general hospitals. The laboratory is directed by a full time pathologist, assisted by three technicians, all with university degrees. This is frankly stated, that our figures may be properly appraised. Our statistics have been divided into two groups.

Statistics Obtained with Noguchi Method.—In 1923, after the Noguchi method had been used in routine Wassermann tests for three years, the figures were tabulated in order to determine the number of

20. Craig (footnote 16, p. 169).

21. Walker: Venereal Diseases in the American Expeditionary Forces, Baltimore, Medical Standard Book Company, 1922, p. 149.

22. Houke: Statistical Study of Prevalence of Syphilis in China Expedition, 15th U. S. Infantry, Mil. Surgeon **50**:251, 1922.

syphilitic patients in whom diagnosis was made by the Wassermann reaction alone, or the percentage of patients with "hidden syphilis" who entered this hospital. The results were startling to our clinicians, as table 3 will show. In a total of 6,963 cases, 2 per cent of the patients were found to have strong four plus reactions. The tests were repeated on all those with doubtful or weak reactions, until they were found to be either strongly or persistently positive or negative. These statistics represent cases only in persons over 14 years of age, and do not include tonsillectomies of any age.

TABLE 3.—*Statistics on Syphilis at the Swedish Hospital from Aug. 1, 1920, to Aug. 1, 1923*

	Number of Cases	Number with Positive Reactions	Per Cent of Positive Reactions	Diagnosed by Wassermann Test	Known Cases of Syphilis on Entrance	Per Cent Diagnosed by Wassmann Test
Obstetric	1,810	9	0.5	9	0	100.0
Medical	1,787	72	4.0	60	12	83.4
Surgical	3,366	60	1.8	54	6	90.0
Total	6,963	141	2.0	123	18	87

TABLE 4.—*Observations Collected from the Literature by Belding and Hunter on Wassermann Reactions in Pregnant Women*

Authority	Location	No. of Cases	Per Cent Positive
Cornell and Stillians: Am. J. Syph. **4**: 342, 1920; J. A. M. A. **72**: 551 (Feb. 22) 1919	Chicago	107	3.6
		69	4.34
Fildes: J. Obst. & Gynec. Brit. Emp. **27**: 124, 1915	London	677	3.9
Hinton, quoted from Vedder: Syphilis and Public Health, Philadelphia, Lea & Febiger, 1918	Boston	172	4.7
Losee: Bull. Lying-In Hosp., New York **10**: 243, 1916	New York	2,000	3.05
Noblecourt and Bonnett: Presse méd. **28**: 745, 1920	Paris	1,185	4.38
Peterson: Am. J. Obst. & Gynec. **1**: 83, 1920	Ann Arbor	381	4.7
Ross and Wright: Lancet **1**: 321, 1921	Midland County, England	300	3.5

In 1,810 obstetric cases, nine of the patients gave positive reactions. The blood was not drawn until one week after delivery. This reveals the incidence of syphilis as 0.5 per cent in the obstetric cases, a figure considerably lower than that found at the University of Michigan Hospital or at Johns Hopkins Hospital. Indeed, this is the lowest percentage offered from any hospital, for in 1924 Belding and Hunter [23] analyzed thirty-four reports from the literature of the results of routine Wassermann tests performed on pregnant women. The highest percentage was advanced by Vedder (31.11 per cent). Lower percentages obtained by other authors are briefly tabulated in table 4, for comparison with the percentage in table 3.

23. Belding, D. L., and Hunter, I. L.: Wassermann Reactions in Different Social Classes, Am. J. Syph. **8**:117, 1924.

In the syphilitic maternity cases in the Swedish Hospital the presence of the disease was not suspected in any instance, the diagnosis being made exclusively by the Wassermann reaction. In a review of the cases as they were presented at the hospital, the presence of the disease was not suggested either by the history or by the clinical observations.

In 1,787 medical cases, 72, or 4 per cent, of the patients gave positive reactions. The Wassermann test made the diagnosis in 60, or 87 per cent, of the 72 medical cases in which syphilis was present.

In 3,366 surgical cases, 60, or 1.8 per cent, of the patients gave positive reactions. The diagnosis was made from the Wassermann reaction in 54, or 90 per cent, of the 60 cases.

These figures, in showing a failure in diagnosis of syphilis on the part of the clinician seem tremendously high, but nowise differ from figures found in other hospitals. On this score one may quote Detweiler: "Clinical examinations and history taking are only 35 to 40 per cent efficient in diagnosing syphilis in adults." Belding and Hunter stated frankly, "At present the Wassermann test is the most satisfactory method of detecting 'hidden syphilis.'" This opinion is based on work done in a Boston maternity hospital, and reported earlier by Belding and Adams. In 5,198 routine cases, 9.2 per cent of the patients were found to have positive reactions. Of these, only 9.8 per cent of the patients with positive reactions showed definite clinical evidence of syphilis, and 19.9 per cent showed evidence suggestive of syphilis, leaving 70.3 per cent without evidence of the disease on which a diagnosis could be made. Likewise, Kilduffe,[24] in reporting 57 positive reactions, could demonstrate syphilis by history or clinical observations in only twenty cases. In 1924, Felsen and Christina [25] reported the cases of 134 patients with positive reactions, 76 of whom did not give any history or show any observations relative to the condition. J. R. Williams [26] obtained Wassermann reactions on 912 healthy persons and found 4.4 per cent to be syphilitic. These patients were apparently free from the disease, on a basis of history and examination. C. Morton Smith [27] was of the opinion that the routine Wassermann test will reveal the presence of syphilis in from 2 to 3 per cent of persons not suspected of having the

24. Kilduffe, R. A.: Incidence of Positive Wassermann Reactions in 484 Supposedly Nonsyphilitic Patients, Arch. Dermat. & Syph. **5**:207 (Feb.) 1922.

25. Felsen, J., and Christina, V.: Review of 2,066 Wassermann Tests and Clinical Histories, Am. J. Syph. **8**:130, 1924.

26. Williams, J. R.: Wassermann Reaction in a Large Group of Supposedly Nonsyphilitic Individuals Including Large Groups of Diabetics and Nephritics, Am. J. Syph. **5**:284, 1921.

27. Smith, C. M.: Syphilis with a Negative Wassermann Reaction, Boston M. & S. J. **189**:286, 1923.

disease, regardless of race, social conditions or environment. Epplen [28] found 55 syphilitic persons by this method, 17 of whom did not present any history or physical signs of the condition. Walker and Haller [29] contended that syphilis is more prevalent than is supposed, and that a routine Wassermann test is of the greatest value in a general hospital. They added that in the examination of 4,000 hospital patients the cases of unsuspected syphilis greatly outnumbered those which were frankly syphilitic. Hornor,[30] too, was of this opinion; in the examination of 500 patients he found 87 cases of syphilis; in only 18 was syphilis a probable diagnosis before the test was done. Commiskey [31] likewise substantiated this belief. In the examination of 1,822 pregnant women, 145, or 8 per cent, were found to be syphilitic. Only 18 per cent of these showed evidence of syphilis in the history or the examination; 82 per cent had a negative history and examination. Meulengracht,[32]

TABLE 5.—*Statistics on Wassermann Reactions at the Swedish Hospital from Aug. 1, 1923, to Aug. 1, 1927*

	No. of Cases	No. of Cases Positive	Per Cent Positive	Diagnosed by Wassermann Test	Known Cases of Syphilis on Entrance	Per Cent Diagnosed by Wassermann Test
Obstetric	2,460	16	0.64	13	3	81.3
Medical	2,500	75	2.9	33	42	44.0
Surgical	5,143	102	2.0	79	23	77.7
Total	10,169	193	1.89	125	68	64.7

in an examination of 504 patients, found that 4 per cent were syphilitic. Fewer than 50 per cent of these knew that they had contracted the disease. In a plea for routine Wassermann reactions, Peterson, referring to his work at the University of Michigan Hospital, stated:

> In many of these cases, both where there was a history of infection and where it was lacking, a physical examination failed to arouse suspicion of the presence of lues. The point to be emphasized is that the same careful physical examination had been made in this particular clinic for years, with only an occasional patient being suspected of an infection of specific nature.

Statistics Obtained with Kolmer Method.—Our second set of Wassermann statistics are briefly tabulated in table 5. These represent

28. Epplen, F.: Observations on 1,650 Routine Wassermann Tests, Am. J. Syph. **9**:360, 1925.

29. Walker, I. C., and Haller, D. A.: Routine Wassermann Reactions of 4,000 Hospital Patients, J. A. M. A. **66**:488 (Feb. 12) 1916.

30. Hornor, A. A.: Wassermann Reaction, Boston M. & S. J. **174**:194, 1916.

31. Commiskey, L. J. J.: Routine Wassermann Reactions in Hospital Obstetrics, Am. J. Obst. **73**:676, 1916.

32. Meulengracht: Wassermann Reaction in Public Hospital, Ugesk. f. Laeger **81**:283, 1919.

10,169 consecutive cases in which the patients were examined by routine Wassermann tests done by the Kolmer method. We found the Kolmer method much more satisfactory than the Noguchi method, or cholesterinized antigen, for it eliminates, in a large measure, the cases of weak inhibition. The cases in table 5 represent the patients admitted to the hospital over a period of four years. In the 10,169 cases, 1.89 per cent were found to be syphilitic, a figure close to the one we found earlier (2 per cent).

In the 2,466 obstetric cases, 16, or 0.64 per cent, of the patients were syphilitic, which, likewise, differs but little from our former figures of 0.5 per cent. The Wassermann test was the means of diagnosis in 13,

TABLE 6.—*Total Admission at Swedish Hospital Classified According to Sex*

Sex	Surgical	Medical	Obstetric	Total
Females	3,208	1,563	2,466	7,237
Males	1,935	997	.....	2,932
Total	5,143	2,560	2,466	10,169

TABLE 7.—*Syphilitic Patients at Swedish Hospital Classified According to Civil Life*

Status	Females	Males	Total
Married	86	41	127
Single	11	31	42
Widowed	8	2	10
Divorced	5	0	5
Not given	2	7	9
Total	112	81	193

or 81.3 per cent, of the total number of syphilitic patients in our obstetric cases.

In the 2,560 medical cases, 75, or 2.9 per cent, of the patients were syphilitic. In 33, or 44 per cent, the diagnosis was made by the Wassermann test. This represents a decrease, both in the percentage of patients with syphilitic medical cases admitted, and in the number shown to be syphilitic by the Wassermann reaction, compared to the first period.

Of 5,143 surgical cases presented, 102, or 2.0 per cent, of the patients gave positive reactions. The diagnosis was made by the Wassermann reaction in 79, or 77.7 per cent, which figures differ but little from the results obtained in the first period.

This group of cases has been subjected to a more complete classification, according to sex, civil life, race, age, nativity, occupation, associated pathologic changes and condition on discharge. This information will be presented briefly in tabulated form.

Sex and Civil Life: In table 7 we note that more women were syphilitic than men, but compared to the total admission of males we find more syphilis in the men. Thus, the percentage of syphilitic women was 1.53, while that of the men was 2.7. The ratio is about one syphilitic woman to every two syphilitic men. It is also interesting to note the relatively large number of unmarried men who had the disease, compared to the number of married men or unmarried women.

Table 8 shows the type of syphilitic patients divided according to sexes. The proportion for each sex is about equal, and sex does not seem to enter into the equation. It is important to note, however, that

TABLE 8.—*Types of Syphilitic Cases at the Swedish Hospital*

	Surgical	Medical	Obstetric	Total
Women	56	40	16	112
Men	46	35	..	81
Total	102	75	16	193

TABLE 9.—*Diagnosis of Syphilis According to Sexes at the Swedish Hospital*

	Known to be Syphilitic	Diagnosed by Wassermann Test	Per Cent Diagnosed by Wassermann Test
A. Females:			
Medical	20	20	50.0
Surgical	10	46	78.2
Obstetric	3	13	81.3
Total	33	79	68
B. Males:			
Medical	22	13	40.0
Surgical	13	33	60.0
Total	35	46	75

the largest number of cases are surgical for both sexes. In the obstetric cases, 10 of the mothers gave birth to living children, and both the mothers and the infants left the hospital in good condition; 6 children were born dead or died during, or shortly following, labor. Thus, the mortality of infants from syphilitic mothers, who reached full term in this hospital, was 40 per cent.

Table 9 indicates that it is apparently about 10 per cent easier to diagnose syphilis in men, on a basis of history and clinical observations, than it is in women.

Race and Nativity: We have but little to offer regarding the race and nativity of the syphilitic patients in the Swedish Hospital; 184 cases were in white persons, 7 in persons of the yellow race and 2 in negroes; 146 patients were born in America and 47 were foreign-born. Since this

hospital admits but few patients other than the white race, and a large percentage of foreign-born patients, conclusions cannot be drawn.

Age: The age incidence is interesting, as shown in table 10. It is seen that women show the presence of syphilis at a younger age than men, the largest number being found between the ages of 21 and 50. The disease is relatively uncommon in women over 50. Men show the presence of syphilis at a later age than women, and probably contract it later in life; the greatest percentage of cases was found in persons between 31 and 60 years of age. Our figures agree with those of Hammond in this country, and with those of Berkeley-Hill [33] in India. We have not seen this point brought out by other writers. From the

TABLE 10.—*Age Incidence of Syphilitic Patients at Swedish Hospital*

Age*	Under 21	21-30	31-40	41-50	51-60	61-70	Over 70
Women	10	33	33	24	4	1	0
Men	0	9	18	23	15	11	2
Total	10	42	51	47	19	12	2

* Ages not given: men, 4; women, 6.

TABLE 11.—*Classification of Syphilitic Patients at the Swedish Hospital According to Occupations*

Occupation	Number	Occupation	Number
Housewives	69	Food venders	7
Tradesmen	21	Transportation workers	6
Clerks	14	Theater employees	5
Laborers	13	Superintendents	3
Handlers of food	11	Farmers	2
Business managers	8	Beauty culturists	2
Seamen	8	Not classified	7
Professional people	7		

foregoing observations, one might conclude that women, as a general rule, contract syphilis about ten years earlier in life than men.

Occupation: It is known that no class of persons is free from the disease. Belding and Hunter stated the belief that the disease varies inversely in proportion to the intelligence of the community; this has been substantiated by other investigators. Inhabitants of cities are more likely to become infected than those of rural districts. Suburban residents have a lower incidence rate of syphilis, than residents of the downtown districts. Army officers are less apt to be infected than enlisted men, as has been shown by Walker. Our cases have been classified on a basis of occupation of the patient, or of the patient's husband, when this was stated. The classification is given in table 11; table 12 shows

33. Berkeley-Hill, O. A. R.: Survey of Inmates of Ranchi-European Insane Asylum, Indian M. Gaz. **56**:89, 1921.

Belding and Hunter's classification, for comparison. It would be impossible for us at this time to follow, in our statistics, the method of classification adopted by Belding and Hunter, as complete information is, unfortunately, not available, nor would such conclusions be justifiable in our report.

Associated Pathologic Changes: In the 193 cases, syphilis was the primary diagnosis in 28 men and in 11 women. Syphilis was secondary, or an associated disease to some other immediate pathologic condition

TABLE 12.—*Classification of Belding and Hunter's Syphilitic Patients According to Occupations*

Grade	Occupation	Distribution per 1,000	Per Cent of Positives	
			Wassermann Test	Clinical Syphilis
V	Unskilled labor	82.4	11.9	4.4
IV	Skilled labor, low grade	99.2	9.3	3.4
III	Skilled labor, medium grade	336.0	9.1	2.9
I	Professional	167.6	8.9	2.5
II	Skilled labor, high grade	286.6	8.9	1.9

TABLE 13.—*Statistics on Syphilis at the Swedish Hospital from Aug. 1, 1920, to Aug. 1, 1927*

	Number of Cases	Number of Cases Positive	Per Cent Positive	Diagnosed by Wassermann Test	Known Cases of Syphilis on Entrance	Per Cent Diagnosed by Wassermann Test
Obstetric	4,276	25	0.58	22	3	88.0
Medical	4,347	147	3.38	93	54	63.3
Surgical	8,509	162	1.90	133	29	82.1
Total	17,142	334	1.9	248	86	74.2

in 53 men and in 101 women. Thus, syphilis, per se, brings a far greater number of men into hospitals than women.

Condition on Discharge: In the 193 cases of syphilis tabulated, 17 of the patients died while in the hospital, 14 left the institution without showing any improvement and 162 were reported as improved, in a good condition or with the primary pathologic factor cured.

SUMMARY AND CONCLUSIONS

For the seven years, in a total of 17,132 consecutive Wassermann tests on adults, we found an average of 1.9 per cent of the patients who entered this institution to be syphilitic (table 13). The diagnosis was made by the Wassermann test in 248, or 74.2 per cent, of the 334 cases, leaving 25.8 per cent in which the diagnosis was made by the physician or surgeon in charge, before the Wassermann test was done.

From the foregoing facts, it may be concluded that:

1. Routine Wassermann reactions in hospitals are not only justifiable, but necessary for the diagnosis in three of every four syphilitic patients admitted.

2. The percentage of syphilitic patients admitted to the Swedish Hospital has been found to be considerably less than that in other general hospitals.

3. Syphilitic men present themselves in hospitals, in a two to one ratio, compared to women.

4. Women in hospitals show the presence of syphilis, on an average, ten years earlier than men.

5. It is approximately 10 per cent easier to diagnose syphilis in men than in women on a basis of history and physical observations.

6. The number of unmarried men with syphilis is high compared to the number of married men who have it, and an unmarried man of middle age is more likely to be syphilitic than a married man of the same age.

7. The mortality rate for syphilitic infants in this hospital was 40 per cent.

EARLY SYPHILIS

RESULTS OF TREATMENT IN FOUR HUNDRED AND FORTY-FOUR CASES*

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With the introduction of the arsenicals the treatment of syphilis entered on its modern era. While an agreement has not been reached among syphiliographers as to the best single plan of treatment, it is generally accepted that the treatment of patients with this infection should be intensive and that the combination of arsphenamine and mercury or bismuth in one form or another should be used. This in a general way constitutes the modern method of antisyphilitic therapy. This method has now been employed for about fifteen years, and while this is but a brief period in the life cycle of syphilis, it is nevertheless sufficiently long to permit of some evaluation of the results obtained.

In the present study we attempt to analyze and to summarize the results obtained in the treatment of patients with early syphilis. This study is based on 444 cases, in which the patients were treated and observed during the period from 1911 to 1926, in the venereal disease service of the department of health of the city of New York and in the department of dermatology of the Mount Sinai Hospital of New York. These cases were selected from the records of several thousand patients with early syphilis who came under observation in these institutions. It is a noteworthy fact that despite the large number of cases registered, only a small percentage of the patients remained under treatment and observation over a sufficiently long period to be included in this study.

In analyzing the results, we have classified the patients into those in whom a probable cure was instituted and those not cured. A word of explanation is necessary as to the meaning of the word "cure" as applied to syphilis, and as to the criteria by which one may determine the probability of a cure.

That syphilis may be radically cured is now accepted by most observers. Stokes [1] stated that, "75 per cent of patients seen in the early primary and secondary stage of syphilis can be radically cured." Nevertheless, it is difficult to determine when a person with the infection is

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* From the Venereal Disease Service, Department of Health, City of New York, and the Department of Dermatology, Mount Sinai Hospital.

1. Stokes, John H.: Modern Clinical Syphilology, Philadelphia, W. B. Saunders Company, 1926.

actually cured. There are perhaps no definite or absolute criteria of a cure. Even reinfection, which is regarded by many as absolute evidence of a cure of syphilis, is not universally so accepted. Certain standards, however, have generally come to be looked on as an evidence of at least a probable cure of the disease, and for the purpose of evaluating the results obtained with any particular method of treatment such standards and criteria must serve as a guide for the present.

The criteria adopted vary somewhat with different observers. European syphilographers, as Müllern-Aspegren,[2] Scholtz, Gennerich and Hoffman, maintain that in the large majority of instances recurrences in early syphilis manifest themselves during the first year of the disease, and consequently if a patient has been observed for at least one and a half years following the last treatment without any recurrence either serologic or clinical, such a patient may be regarded as probably cured. American observers, as Moore and Kemp [3] and Stokes agreed in the main with these criteria, but in addition emphasized the need of neurologic and cardiovascular studies of the patient for the purpose of determining a probable cure.

The standards adopted in the present study are in the main similar to those already outlined. The patient was considered as probably cured when the following conditions were met: (1) the patient came under care during the early stage of the disease; (2) the patient received one or more courses of treatment, a course consisting of from six to eight injections of arsphenamine and from twelve to fifteen or more injections of mercury or bismuth; (3) a clinical recurrence did not manifest itself during the period of treatment; (4) the Wassermann reaction was negative at the end of the treatment; (5) the patient was observed for a period of at least one and a half years following the last treatment; (6) clinical recurrence of any type did not appear during this last period of observation, and (7) the results of repeated Wassermann tests during this period were all negative.

In addition to these criteria, a considerable number of our patients in whom a probable cure was suspected also had a provocative arsphenamine test, and a cure was accepted in six cases on the basis of reinfection.

Although an examination of the spinal fluid is desirable in every case regarded as a probable cure, this could not be carried out in all of our cases. It is admitted that the lack of data on the spinal fluid in some patients may, to an extent, impair our statistics. We feel, how-

2. Müllern-Aspegren: Abortivbehandlung der Syphilis, Acta dermat.-venereol., 1922.

3. Moore, J. E., and Kemp, J. E.: The Treatment of Early Syphilis, Bull. Johns Hopkins Hosp. **39**:36 (July) 1926.

ever, from an analysis of the tests made on the spinal fluid, that the percentage of positive symptoms would be small and not sufficient materially to alter our results.

While patients who have met the criteria as outlined are regarded as probably cured, we do not lose sight of the possibility that a certain number of them actually may not be cured. Some of them may still harbor the infection, and may develop either clinical or serologic evidence of the disease later in life. For the present, however, we have no means of ascertaining this possibility in any given case, and consequently all those who met our standards must be considered as probably cured.

Patients were classed as not cured when, after having received one or more courses of treatment, they showed a clinical or serologic relapse of any type. In some, the Wassermann reaction remained persistently positive or frequently there was a relapse; in some, clinical manifestations of the disease reappeared; in others, there was clinical evidence or symptoms of the spinal fluid indicative of a neurologic disease. When any type of recurrence appeared after three courses of treatment, the patient was considered not cured, even though further treatment led to an apparent cure according to our criteria.

CLASSIFICATION OF CASES

This study deals entirely with the results of treatment of patients with early active syphilis. All the patients included showed definite early manifestations of the disease. The cases are divided into four groups according to the approximate duration of the infection at the time treatment was instituted.

Primary Seronegative Cases.—The patients in this group came under observation with a primary lesion, the dark-field examination proving positive and the Wassermann reaction being negative. The patients, of course, did not show any secondary manifestations. The duration of the infection in these patients was estimated as not longer than five weeks. There were thirty-six cases in this group.

Primary Seropositive Cases.—In this group are included patients who presented a primary lesion, the dark-field examination usually proving positive though at times it was negative, and the results of the Wassermann test being definitely positive (2 plus or more). In this group, too, the patients did not show any secondary manifestations. The duration of the infection in these cases was judged to be from five to eight or nine weeks, that is, from the onset of the positive Wassermann reaction and prior to the appearance of the secondary eruption. Although in these cases the condition is ordinarily regarded as primary syphilis, serologically it is secondary syphilis. In this group there were fifty-five cases.

Early Secondary Cases.—The patients in this group came under observation during the early secondary period with clinical manifestations of the disease. The primary lesion was at times still present, though usually it was already healed; the Wassermann reaction was always positive, and secondary manifestations of the skin or mucous membranes of one type or another were already present. The duration of the infection was judged to be up to three months. The number of such cases was 267.

Late Secondary Cases.—To this group belong patients who came under observation between the third and the sixth month of the disease. They all presented definite clinical evidence of the disease and a positive Wassermann reaction. There were eighty-six cases in this group.

PLANS OF TREATMENT

Since the introduction of the modern methods of antisyphilitic therapy, various plans of treatment all more or less intensive in character have been suggested and employed. Each plan has its advocates, and at present there is no unanimity of opinion as to whether one plan is superior to any other. In the study under consideration the patients were treated according to the following plans:

The Intermittent Plan.—Various syphilologists have modified this plan which was originally introduced by Neisser. It consists of regular courses of arsphenamine and injections of mercury or bismuth, alternating with periods of rest during which no treatment is given. This plan is the one most widely accepted at the present time. A course usually consists of from six to eight injections of arsphenamine, given from five to seven days apart, and from twelve to fifteen injections of mercury or bismuth given once a week or oftener. The rest periods vary from about one month following the first course to two months or more following later courses. In our study, 269 patients were treated according to this plan.

The Intensive Plan.—(Scholtz, Pollitzer, and others.) In this plan the aim is to saturate the patient with the arsenical at the beginning of each course of treatment in order to affect rapid sterilization. The injections of arsphenamine are administered in fairly large doses and at very short intervals, daily for the first three days, or, according to modifications, every second day, at the beginning of the course. This is followed by a series of injections of mercury or bismuth, and the course is terminated by another series of injections of arsphenamine. Several such courses are administered. Sixteen patients were treated according to this plan.

The Mixed Injection Method.—(Introduced by Linser.) In this method a mixture of neoarsphenamine and mercuric chloride (or a

similar mixture) is employed. These treatments are given in courses of from eight to ten or more injections alternating with periods of rest. Twenty patients of this series were treated according to this plan.

The Continuous Treatment Plan.—Almquist suggested this plan, which differs from the others in that the treatments are given continuously without rest periods. The drugs employed are administered in alternating courses. First, a course of arsphenamine is given, from six to eight treatments; this is followed by from six to eight injections of mercury or bismuth once a week; this in turn, by injections of arsphenamine and by further courses of mercury or bismuth. The treatments are continued for as long as a year. In our series, fifty-five patients were treated according to this plan, though in a few the plan was modified to include rest periods between courses.

Irregular Plan.—A certain number of patients were treated by a combination of these methods, without a definitely organized plan. A few of these received only a few injections of arsphenamine, but comparatively numerous injections of mercury. These patients came under observation during the years when treatment with arsphenamine was still in a state of flux. The number of patients in our study treated by the irregular plan was eight-five.

Whichever plan was employed, our standards were to administer numerous courses to all patients who had early syphilis. A considerable number of patients, however, received only one or two courses. This was due principally to the fact that for one reason or another these patients had stayed away after the first or second course for varying lengths of time. They subsequently returned for further treatment or for observation, and we were thus enabled to include them in this study.

Courses consisted of injections of arsphenamine and mercury or bismuth. In determining what constitutes a course the number of injections of arsphenamine were taken as the standard. With some exceptions, the first course consisted of from six to eight injections of arsphenamine and from twelve to fifteen injections of mercury or bismuth. The exceptions were those cases in which the patients were given only a few injections of arsphenamine during the early days of arsphenamine therapy, but more than fifteen injections of merucury. These patients are considered as having received only one course because of the small number of injections of arsphenamine. Later courses consisted of six injections of arsphenamine and from ten to twelve injections each of mercury or bismuth.

The dosage of the drugs employed in the various plans of treatment enumerated varied with the age, weight, sex and general condition of the patient. The average dose of arsphenamine was from 0.2 to 0.4 Gm. per injection, and that of mercury and bismuth from 1 to 1.5 cc. of the insoluble preparations.

As will be noted, most of our patients were treated by the administration of arsphenamine and mercury or bismuth concurrently. It is generally agreed that these drugs exert their therapeutic effect on syphilis in different ways, arsenic acting directly on the spirochete and mercury and bismuth probably indirectly, presumably by stimulating body resistance. The combined and simultaneous attack of both remedies, therefore, should theoretically prove more effective in destroying the infecting agent and eradicating the disease.

Furthermore, most of our patients were given rest periods between courses. Even though of the utmost therapeutic value in the treatment of syphilis, it must be borne in mind that arsenic, mercury and bismuth are toxic agents, especially when pushed beyond certain limits, and that due care must be taken in their administration. The continuous use of these drugs without periods of rest is, in our experience, not well borne by patients. We believe that rest periods between courses of treatment are desirable to permit the elimination of accumulated drugs in order to avoid toxic effects on vital organs.

ANALYSIS OF RESULTS

In tables 1, 2, 3 and 4 appears an analysis of the various groups of cases according to the amount of treatment received, length of period of observation and the results obtained with treatment.

Table 1 deals with cases in which the patients presented themselves during the primary seronegative stage. This group includes thirty-six patients. The plans of treatment employed in these cases were as follows: twenty-seven treated by the intermittent plan; four by the very intensive method; two by the continuous plan, and one by the mixed injection plan.

It is striking to note that in thirty-three of the thirty-six cases, or 90 per cent, the patients were apparently cured. This emphasizes the great importance and value of early diagnosis and early treatment in syphilis. It is also noteworthy that eleven of the patients regarded as probably cured received only a single course of treatment, that is, from six to eight injections of arsphenamine and from twelve to fifteen injections of mercury or bismuth. The patients in these cases have been observed for a comparatively long period of time, as is shown in table 1. This would seem to indicate that if treatment is begun very early in the disease, even a single course of intensive treatment may suffice to bring about a cure.

Fourteen of the patients received two courses of treatment and twelve of these, or 85 per cent, were probably cured. Of the two not cured one was treated by the intermittent plan, and the other received a course of twenty injections of bismuth at the outset of treatment, this

TABLE 1.—*Primary Seronegative Syphilis*

Number of Courses Received	Total Number of Cases	Number Probably Cured	Percentage Probably Cured	Period of Observation in Years								9 to 10 and Over	Number Not Cured	Percentage Not Cured
				1½ to 2	2 to 3	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9			
1 course (from 6 to 8 arsphenamine and 12 to 15 or more mercuy or bismuth)	11	11	100	1	4	3	1	1	1	0	0	0	0	0
2 courses (9 to 14 arsphenamine; 25 to 30 or more mercury or bismuth)	14	12	85	7	3	0	1	0	1	0	0	0	2	15
3 courses (15 to 20 arsphenamine; 35 to 40 mercury or bismuth)	8	7	89	5	1	0	0	0	0	0	0	1	1	11
4 courses (21 to 26 arsphenamine; 45 to 50 mercury or bismuth)	3	3	100	2	1	0	0	0	0	0	0	0	0	0
5 courses (27 and over arsphenamine; 51 and over mercury and bismuth)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	36	33	90	15	9	3	2	1	2	0	0	1	3	10

TABLE 2.—*Primary Seropositive Syphilis*

Number of Courses Received	Total Number of Cases	Number Probably Cured	Percentage Probably Cured	Period of Observation in Years								9 to 10 and Over	Number Not Cured	Percentage Not Cured
				1½ to 2	2 to 3	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9			
1 course (6 to 8 arsphenamine and 12 to 15 or more mercury or bismuth)	20	13	65	7	1	1	0	0	2	0	0	2	7	35
2 courses (9 to 14 arsphenamine; 25 to 30 or more mercury or bismuth)	16	11	68	4	3	2	1	0	0	1	0	0	5	32
3 courses (15 to 20 arsphenamine; 35 to 40 mercury or bismuth)	10	5	50	1	2	0	0	0	0	1	0	1	5	50
4 courses (21 to 26 arsphenamine; 45 to 50 mercury or bismuth)	5	4	80	0	2	1	1	0	0	0	0	0	1	20
5 courses (27 and over arsphenamine; 51 and over mercury or bismuth)	4	1	25	0	0	0	1	0	0	0	0	0	3	75
Total	55	34	61	12	8	4	3	0	2	2	0	3	21	39

being followed by a series of treatments with arsphenamine. This patient came under observation when bismuth was first introduced into the therapy of syphilis, and when its position as an antisyphilitic remedy was not yet fully established.

Eight of the patients received three courses of treatment, and seven of them were probably cured. The patient who was not cured was treated according to the modified continuous plan, silver arsphenamine being employed as the arsenical. The three patients who received four courses were probably cured.

A striking fact of the efficacy of intensive treatment during the seronegative stage of syphilis is furnished by the results of the Wassermann test. It is interesting to observe that in thirty-two of the thirty-three cases in this series, in which the patients were regarded as probably cured, the Wassermann reaction never became positive through the entire period of treatment and observation. In only one case did the reaction become positive during the second week of treatment; however, it soon dropped to negative again and remained so during the period of treatment and observation.

Table 2, which deals with primary seropositive syphilis, gives the results for fifty-five patients. The majority, thirty, were treated by the intermittent plan; nine according to the continuous plan; three by the mixed injection method; three by the intensive plan, and ten according to the irregular plan.

Thirty-four of the total number of patients in this group were probably cured—a percentage of 61. This is an unfavorable showing when compared with the results obtained in the seronegative group, in which the percentage of cures as noted was 90. This again emphasizes the importance of detecting the infection and of instituting treatment during the seronegative stage.

The number of patients treated with a single course was twenty. Seven of these had received a much greater number of injections of mercury than is given in a single course, but are included in this group because the number of injections of arsphenamine administered was eight or less. Thirteen of the twenty patients in this group of cases were cured and seven were not cured.

Of the sixteen who received two courses, eleven were apparently cured. Ten received three courses, with five apparent cures; five were given four courses of treatment and four of these were cured. Only one of the four who received five or more courses was apparently cured.

In table 3 are analyzed the cases of early secondary syphilis. This group includes 267 patients, the largest number in our series. The intermittent plan of treatment was employed in 148 patients; the continuous

TABLE 3.—*Early Secondary Syphilis*

Number of Courses Received	Total Number of Cases	Number Probably Cured	Percentage Probably Cured	Period of Observation in Years									Number Not Cured	Percentage Not Cured
				1½ to 2	2 to 3	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10 and Over		
1 course (6 to 8 arsphenamine; 12 to 15 or more mercury or bismuth)	61	44	72	7	14	9	3	3	3	1	1	3	17	28
2 courses (9 to 14 arsphenamine; 25 to 30 or more mercury or bismuth)	73	56	76	25	15	7	3	1	3	1	1	0	17	24
3 courses (15 to 20 arsphenamine; 35 to 40 mercury or bismuth)	66	38	57	11	7	5	5	7	2	1	0	0	28	43
4 courses (21 to 26 arsphenamine; 45 to 50 mercury or bismuth)	34	16	47	3	5	2	1	4	1	0	0	0	18	53
5 courses (27 and over arsphenamine; 51 and over mercury or bismuth)	33	10	30	3	1	3	1	2	0	0	0	0	23	70
Total	267	164	61	49	42	26	13	17	9	3	2	3	103	39

TABLE 4.—*Late Secondary Syphilis*

Number of Courses Received	Total Number of Cases	Number Probably Cured	Percentage Probably Cured	Period of Observation in Years									Number Not Cured	Percentage Not Cured
				1½ to 2	2 to 3	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10 and Over		
1 course (6 to 8 arsphenamine; 12 to 15 or more mercury or bismuth)	13	10	77	1	4	2	1	1	0	1	0	0	3	23
2 courses (9 to 14 arsphenamine; 25 to 30 or more mercury or bismuth)	23	12	52	3	4	3	2	0	0	0	0	0	11	48
3 courses (15 to 20 arsphenamine; 35 to 40 mercury or bismuth)	20	7	35	2	2	1	0	2	0	0	0	0	13	65
4 courses (21 to 26 arsphenamine; 45 to 50 mercury or bismuth)	17	7	41	2	2	1	1	0	0	0	0	0	10	59
5 courses (27 and over arsphenamine; 51 and over mercury or bismuth)	13	3	23	0	1	0	2	0	0	0	0	0	10	77
Total	86	39	45	8	13	7	6	3	1	1	0	0	47	55

plan in thirty-two; the mixed injection treatment in twelve; the intensive plan in eight, and the irregular plan in sixty-seven.

One hundred and sixty-four of the entire group, or 64 per cent, were probably cured. This percentage approximates closely the percentage of probable cures in the primary seropositive group. It is perhaps an indication of the fact that once the Wassermann reaction becomes positive, the presence or absence of the secondary eruption does not materially influence the probability of a cure.

Analyzing this group according to the amount of treatment received, it is found that forty-four of the sixty-one who had received but a single course were cured, while fifty-six of the seventy-three who had received two courses were apparently cured, a surprisingly high percentage. Of the remaining, sixty-six received three courses with thirty-eight cures; thirty-four, four courses with sixteen cures; and thirty-three, five or more courses with only ten cures.

Table 4 deals with cases of late secondary syphilis, that is, with syphilis between the third and sixth months of its course. The number of cases in this group is eighty-six. Of these, sixty-two patients were treated by the intermittent plan, eleven by the continuous, four by the mixed injection, one by the very intensive and eight by the irregular plan.

Thirty-nine, or 45 per cent of the eighty-six patients, were apparently cured. This is the smallet percentage of cures recorded in any of our groups. This poor showing is not unexpected, and is due, undoubtedly, to the delay in instituting treatment.

Ten of the thirteen patients in this group who were treated with a single course were apparently cured; this is a surprisingly high percentage and is partially accounted for by the large number of injections of mercury these patients received. Twenty-three patients received two courses and twelve of them were apparently cured; twenty were given three courses with seven apparent cures; seventeen had four courses and seven of them were apparently cured, while thirteen received five or more courses and only three of these seemed to have been cured. A further summary of the cases according to the amount and type of treatment is given in tables 5 and 6.

In table 5 the cases are classified according to the number of courses received by the patient. Of a total of 270 patients in our series who were probably cured, 29 per cent had received only one course of treatment; 35 per cent had received two courses; 21 per cent three courses; 11 per cent four courses, and 5 per cent five or more courses. This seems to indicate that the percentage of cures is not in direct proportion to the amount of treatment administered. The same holds true of the patients who were not cured, namely, that a direct relation cannot be established between the quantity of treatment administered and the

TABLE 5.—*An Analysis of Results According to Number of Courses Received*

Number of Courses Received	Total Number of Cases	Primary Seronegative		Primary Seropositive		Early Secondary		Late Secondary		Number of Cases Probably Cured	Per Cent	Number of Cases Not Cured	Per Cent
		Probably Cured	Not Cured	Probably Cured	Not Cured	Probably Cured	Not Cured	Probably Cured	Not Cured				
1 course (6 to 8 arsphenamine; 12 to 15 or more mercury or bismuth)	105	11	0	13	7	44	17	10	3	78	74	27	26
2 courses (9 to 14 arsphenamine; 25 to 30 or more mercury or bismuth)	126	12	2	11	5	56	17	12	11	91	72	35	28
3 courses (15 to 20 arsphenamine; 35 to 40 mercury or bismuth)	104	7	1	5	5	38	28	7	13	57	54	47	46
4 courses (21 to 26 arsphenamine; 45 to 50 mercury or bismuth)	59	3	0	4	1	16	18	7	10	30	50	29	50
5 courses (27 and over arsphenamine; 51 and over mercury or bismuth)	50	0	0	1	3	10	23	3	10	14	28	36	72
Total	444	33	3	34	21	164	103	39	47	270	60	174	40

TABLE 6.—*An Analysis of Results According to Plans of Treatment*

Plan of Treatment	Total Number of Cases	Primary Seronegative		Primary Seropositive		Early Secondary		Late Secondary		Number of Cases Probably Cured	Per Cent	Number of Cases Not Cured	Per Cent
		Probably Cured	Not Cured	Probably Cured	Not Cured	Probably Cured	Not Cured	Probably Cured	Not Cured				
Intermittent (Neisser); courses of arsphenamine, mercury or bismuth	269	27	2	18	12	89	59	26	36	160	59	109	41
Modified continuous (Almquist); alternating series of arsphenamine and mercury or bismuth	54	1	1	7	2	20	12	3	8	31	57	23	43
Mixed injection (Linser); injections of a mixture of mercuric chloride and neoarsphenamine	20	1	0	2	1	7	5	2	2	12	60	8	40
Very intensive (Scholtz, Pollitzer and others); intensive arsphenamine treatment daily or on alternating days at the beginning of treatment	16	4	0	3	0	8	0	1	0	16	100	0	0
Irregular; a combination of various plans, but chiefly along the lines of the intermittent method	85	0	0	4	6	40	27	7	1	51	60	34	40
Total	444	33	3	34	21	164	103	39	47	270	60	174	40

results obtained. Of the 174 patients who were not cured: 15 per cent received one course of treatment; 20 per cent received two courses of treatment; 27 per cent received three courses of treatment; 16 per cent received four courses of treatment, and 20 per cent received five or more courses.

If all the cases in the study are combined and the results tabulated according to the number of courses received, it is found that: Of the 105 who received one course, 74 per cent were apparently cured; of the 126 who received two courses, 72 per cent were apparently cured; of the 104 who received three courses, 54 per cent were apparently cured; of the 59 who received four courses, 50 per cent were apparently cured; of the 50 who received five or more courses, 28 per cent were apparently cured.

The decrease in the percentage of cures, with the increase in the amount of treatment administered, would appear paradoxic. It is, however, in accord with the general impression gained in treating large numbers of patients with syphilis that those patients who do not respond to the first few courses of treatment, as a rule remain recalcitrant to further therapy, and serologically at least a relapse frequently occurs.

Many of the cases in which the patients were considered as probably cured after the administration of two or more courses of treatment were serologically and clinically negative after the first course of treatment and throughout the subsequent period of observation. They were, however, given additional treatment in accordance with our plan to administer intensive and prolonged treatment to all patients with active, early syphilis. Whether some of these were not actually cured by the first course of treatment cannot be established.

An analysis of the results obtained with the various plans of treatment is shown in table 6. The figures show that, with one exception, no one particular plan of therapy employed is superior to any of the others. The percentage of probable cures with all of them is approximately the same, ranging between 57 and 60. The one exception is the intensive plan of treatment which stands out in striking contrast, showing 100 per cent probable cures. As will be seen from table 6, only sixteen patients were treated by this method, and while this is too small a number on which to base any conclusions, it is none the less a significant fact that all of them were apparently cured. Four of the sixteen cases were primary seronegative, three primary seropositive, eight early secondary and one late secondary case. In all of these cases the patients had been observed for comparatively long periods of time, none for less than two years.

EARLY TREATMENT IN SYPHILIS AND THE PUBLIC HEALTH ASPECT

An interesting problem, particularly from the public health aspect of the disease, is the matter of delinquents among the class of patients under consideration. What has become of the thousands of patients who came under our care during the early stage of the disease, received treatment, and then discontinued attendance despite persistent follow-up? Many of them had received adequate treatment, as judged by the usual standards, and are probably cured. A number, no doubt, continued their treatment elsewhere, either at the hands of their private physicians or at other clinics. The majority, however, probably discontinued treatment altogether under the erroneous belief that they were cured. There can be little doubt that a high percentage of these patients had a relapse later and that they constitute a definite source of the spread of the disease.

Another significant fact demonstrated by our records is the small number of patients that come under treatment during the chancre stage. Of the 444 cases in the series, only thirty-six, or 8 per cent of the patients, came before the Wassermann reaction became positive; fifty-five more came during the primary but seropositive stage, whereas 80 per cent did not present themselves for treatment until the appearance of the secondary infections and many of them not until many months later.

In view of the established fact that patients coming under care during the seronegative stage have an infinitely better chance of being cured, it is urged that an earnest effort be made to acquaint the public and more especially the physician with the importance of early diagnosis and early and intensive treatment. A campaign on the part of public health authorities and the emphasis of the paramount importance of the dark-field examination as a diagnostic aid in cases of early syphilis and of early, adequate treatment, particularly during the seronegative stage, is most valuable in the control of this disease.

CONCLUSIONS

1. Of 444 patients with early syphilis who were treated intensively, a total of 60 per cent were apparently cured.

2. The greatest number of cures, amounting to 90 per cent, was obtained in the primary seronegative group. The golden opportunity in the treatment of syphilis lies, therefore, during the seronegative period.

3. In both the primary seropositive and early secondary groups the number of probable cures was 61 per cent.

4. Delay in treatment beyond the third or fourth month reduced the probable cures to 45 per cent.

5. The best results were apparently obtained with the intensive plan of treatment (Scholtz, Pollitzer and others).

6. The other plans of intensive therapy gave results which did not materially differ one from the other.

7. Intensive therapy with rest periods between courses apparently yielded as good results as treatment by the continuous plan. Because of greater safety and expediency, the former would appear to be the method of choice in routine treatment.

8. A number of the patients were apparently cured after one or two courses. Since, however, it is impossible to judge *a priori* how a patient with a given condition will respond to therapy, it is advised that prolonged intensive treatment be given to all patients with early cases of syphilis.

9. The dark-field examination and early intensive treatment are prime factors in the control of syphilis.

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GRANULOMA INGUINALE

PRELIMINARY REPORT ON THE CULTURE OF THE DONOVAN BODY *

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The etiology of granuloma inguinale has interested investigators in this field throughout the world since the disease was first adequately described by Conyers and Daniels in 1896. Donovan created widespread interest in the disease by describing cellular inclusions which were constantly found in smears obtained from cases of granuloma inguinale. The cellular inclusions discovered by Donovan were found in the cystoplasm of the mononuclear cells, which cell is the predominating one of the lesion. Donovan's discovery has been confirmed by all of those investigators who have interested themselves in the study of this disease. The cellular inclusions have been named after their discoverer, and are known as Donovan bodies.

A disease that has been established as a definite clinical entity, being widespread in its geographic distribution, portraying the same clinical manifestations, the same pathologic change, the constant observation of the Donovan bodies in smears from the lesion and the organism always having the same staining and morphologic characteristics and the same relation to the endothelial cells, must by preference be the etiologic factor or bear a close relationship to the production of the disease.

There is another organism that is constantly found in the lesions of granuloma inguinale and bears the same relationship to the endothelial cells as the Donovan body. This organism belongs to the bacterial group, and is classified as *Bacillus mucosus-capsulatus*. This organism is a secondary invader, and has been frequently cultivated and classed as simulating the Donovan body.

As granuloma inguinale has some of the clinical aspects shown by cutaneous leishmaniasis, the same diffiulty arises in the isolation of the Leishman-Donovan body. *Bacillus mucosus-capsulatus* is the most frequent secondary contaminator, and is a source of annoyance in obtaining a pure culture of the Leishman-Donovan bodies. *Bacillus mucosus-capsulatus* in cutaneous leishmaniasis bears the same relationship to the endothelial cells as the Leishman-Donovan body, but does not have any bearing on the etiology of the disease. This same condition exists in granuloma inguinale. Figure 1 shows *Bacillus mucosus-capsulatus* in the cytoplasm of an endothelial leukocyte, obtained by smear from a lesion of granuloma inguinale.

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There are other organisms, including spirochetes, that are found in smears from the lesion of granuloma inguinale, but the spirochetes are not constant observations. The other organisms, however, produce unwarranted trouble by their activity on culture mediums, and inhibit to a great degree the obtaining of a pure culture of the Donovan body.

The investigations on granuloma inguinale have centered around the cultivation of the Donovan body and the experimental production of the disease. The following authors have been successful in isolating from cases of granuloma inguinale a gram-negative organism, similar to the Donovan body and growing on all culture mediums: Aragao and Vianna in E. L. Walker;[1] Randall, Small and Belk;[2] Lynch;[3] Meridith F. Campbell;[4] James Sargent;[5] J. A. McIntosh;[6] Max Goldzieher and Samuel M. Peck,[7] Leon H. Cornwall and S. M. Peck.[8]

The only criterion that one has as confirmation of the cultivation of the Donovan body is the comparison of its staining qualities and its morphologic characteristics with those of the organism found in smears from lesions of granuloma inguinale. The relationship of the organisms that have been cultivated to the experimental production of the disease lacks proof from the standpoint of Koch's postulates.

What are the staining qualities and the morphology of the Donovan bodies in smears obtained from lesions of granuloma inguinale? Stained by Wright's stain the organisms show a pink-staining cystoplasm with a chromatin dot, or rod, that stains a deep red. The edge of the cytoplasm stains rather heavy, giving it the effect of a definite capsule. Stained by Gram's stain the organism shows a rather peculiar quality, that is, the organisms contained in the cytoplasm of the endothelial leukocyte stain gram-negative, while those that are not confined to the endothelial cells and are free in the smear stain gram-positive.

The morphology of the Donovan body shows the following characteristics: The organism varies in shape and size from a small

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1. Aragao and Vianna, quoted by Walker, E. L.: The Etiology of Granuloma Inguinale, J. M. Research **37**:427 (Jan.) 1918.

2. Randall, A.; Small, J. C., and Belk, W. P.: Tropical Inguinal Granuloma in the Eastern United States, J. Urol. **5**:539 (June) 1921; ibid., Surg. Gynec. Obst. **34**:717 (June) 1922.

3. Lynch, K. M.: Granuloma Inguinale, J. A. M. A. **77**:925 (Sept. 17) 1921.

4. Campbell, Meridith F.: Etiology Granuloma Inguinale, Am. J. M. Sc. **174**:670 (Nov.) 1927.

5. Sargent, James: Granuloma Inguinale, J. A. M. A. **88**:1394 (April 30) 1927.

6. McIntosh, J. A.: A Study of the Etiology of Granuloma Inguinale, J. Tennessee M. A. **19**:190 (Nov.) 1926.

7. Goldzieher, Max, and Peck, Samuel M.: Granuloma Inguinale, Arch. Dermat. & Syph. **14**:14 (July) 1926.

8. Cornwall, Leon H., and Peck, Samuel M.: Etiology of Granuloma Inguinale. Arch. Dermat. & Syph. **12**:613 (Nov.) 1925.

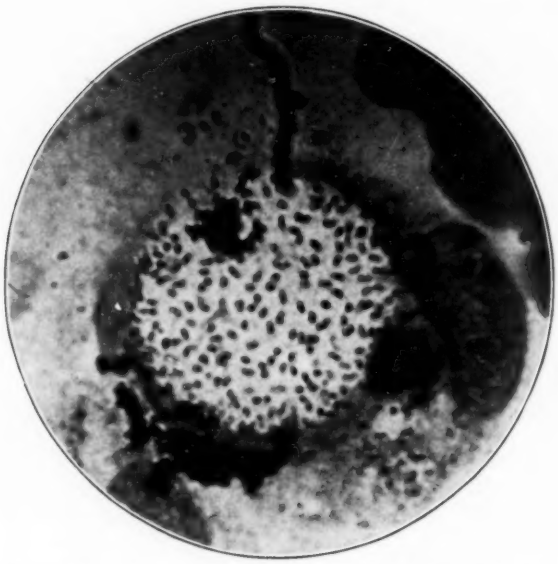
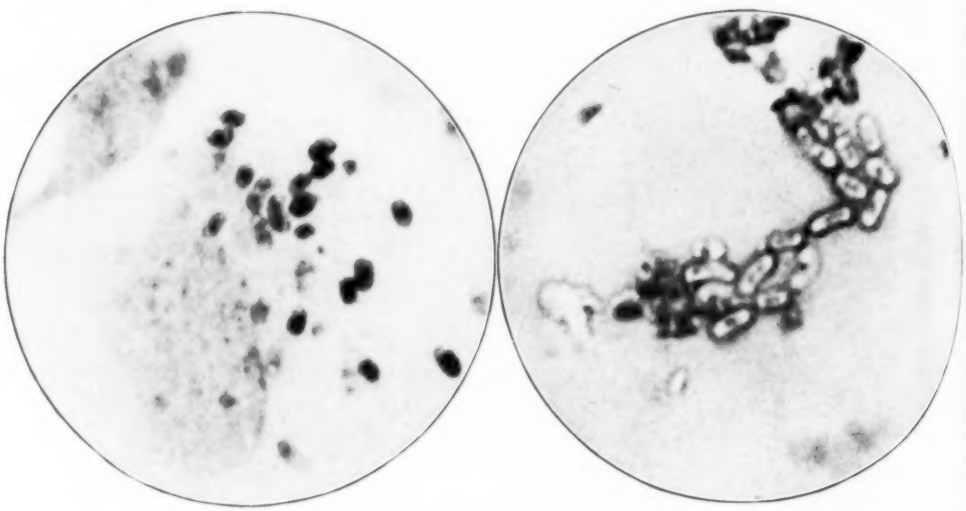


Fig. 1.—Bacillus mucosus-capsulatus occurring in the cytoplasm of an endothelial cell. From a smear obtained from a case of granuloma inguinale.



A B

Fig. 2.—*A* shows the Donovan bodies in the cytoplasm of an endothelial cell, taken from a smear obtained from a case of granuloma inguinale. *B* shows a smear made from the culture. Both are stained by Wright's stain. On comparison the organisms are seen to be identical.

round to oblong structure. The transition from the round to the oblong shape has an intermediate oval stage, and does not show marked pleomorphism. The chromatin shows the same characteristics as the cytoplasm. At first the chromatin is a simple dot, then it slightly elongates and becomes rod-shaped, separates and occurs at each end of the cytoplasm as polar bodies. The cytoplasm then constricts in the center, and the organism divides into two small round bodies. All of these changes which have been enumerated are typical developmental stages of the organism. This is well shown in figure *2 A*.

The experimental production of the disease should correspond to the pathology and development of the disease as seen in man. The

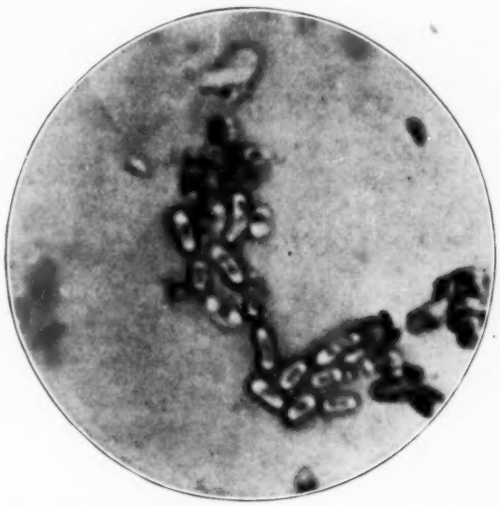


Fig. 3.—Smear from the culture showing the Donovan body. The smear was stained by Wright's stain.

clinical characteristics displayed by the disease in man are as follows: At first there is a small macule which develops into a papule. The skin overlying the papule ulcerates, producing a small, superficial ulceration. This ulceration soon destroys the papule, and the disease slowly progresses into a chronic, superficial, serpiginous, sclerosing, granulomatous ulceration. The ulceration does not show abscess formation at any time. It is the exception to the rule that spontaneous healing takes place, if it ever occurs.

The organisms that have been cultivated do not correspond to the Donovan bodies in staining reaction or morphology, and the lesions that have been produced in experimental animals have not shown the characteristics of the disease as seen in man. The disease has never

been produced experimentally in man, except the lesion produced by McIntosh, which corresponds to auto-inoculation, a common occurrence in the disease.

I have tried to cultivate the Donovan body since 1923, and recently have been successful in obtaining in pure culture an organism from a case of granuloma inguinale. This organism has all the staining qualities, both by Gram's and by Wright's stain, and morphologic characteristics as the Donovan body displays in smears from clinical cases (fig. 3).

The culture was obtained from a case of granuloma inguinale occurring in a negro. The duration of the disease was five years. The organisms were grown on Sabarouds' culture medium, aerobically at 39 C.

For comparison of the morphology of the organism that I have cultivated with the organism obtained from a clinical case, one may note figure 2 *A* which is a photomicrograph of the Donovan bodies occurring in the endothelial leukocyte obtained from a case of granuloma inguinale and 2 *B* which is the smear from the culture. If both pictures are studied closely, the different developmental stages are easily seen showing identical morphology.

1551 Canal Street.

PURPURA ANNULARIS TELANGIECTODES (MAJOCCHI'S DISEASE)

REPORT OF A CASE *

MOSES SCHOLTZ, M.D.
LOS ANGELES

The following case of Majocchi's disease is deemed of sufficient interest to be recorded, not only because of its casuistic rarity, but also because of the uncertainty of the nosologic classification of the Majocchi syndrome and of its relationship to other members of the telangiectatic group of dermatoses.

REPORT OF CASE

History.—N. R., a man, aged 26, American born, single, a glass blower working in a shop making "Neon" lights, dated the beginning of the skin eruption about five months before examination, at which time he noticed a reddish, oval patch the size of a dollar on the inside of the left thigh. There was no itching. In the beginning, he thought the lesion was a bruise. As it increased in size and began to clear up in the center, he consulted a neighborhood physician, who concurred in the patient's suggestion that it might be a ringworm and suggested painting it with tincture of iodine. Five or six weeks later the patient noticed that new, small, pointlike and round lesions had developed on both legs; also that these lesions did not produce any subjective sensations. However, the lesions showed a steady tendency to grow in numbers and size, and to spread on the legs, upper extremities and the trunk. The patient became alarmed and consulted another physician, Dr. Riaboohin, who made a diagnosis of a peculiar and persistent purpura, and referred the patient to me for diagnosis.

The family history was unimportant. In childhood, the patient had had measles and mumps. Two years before examination he had contracted gonorrheal urethritis, and had been under treatment for two months. There was still a "morning drop" from the urethra. Otherwise, the patient had always been well.

Examination.—The patient gave the impression of a well developed, well nourished, healthy man. The physical examination of the chest and abdomen did not reveal any abnormalities. There were a few carious teeth, and a slight gingivitis. Both tonsils showed some enlargement with clinical evidence of infection. There are some adenopathy of the inguinal glands. As reported by the attending physician, the prostate gland was hard, enlarged and tender on palpation. Examination of the smears made from the morning urethral discharge and prostatic secretion, by the same physician, revealed numerous pus cells and a few gonococci.

The clinical genito-urinary diagnosis was chronic gonorrheal posterior urethritis and prostatitis.

The Wassermann reaction was negative. The bleeding, clotting time and blood count were normal.

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* Submitted for publication, July 3, 1928.

* From the Department of Dermatology, Los Angeles General Hospital.

In a general way, the eruption of skin might be described as a purpura-like rash consisting of pointed, round, stellate and annular lesions symmetrically involving the upper part of the trunk and the lower limbs.

The primary and basic morphologic type of lesions, which through multiplication, extension and coalescence made up all the secondary lesions and the whole composite pattern of the skin eruption, were discrete, bright or deep red vascular puncta, varying in size from that of a pinpoint to that of a pinhead, and linear telangiectasias.

The secondary composite lesions could be divided, according to the morphologic design, into the following types:

(1) Small round and ringlike lesions. These lesions varied from that of a pinhead to that of a dime, and consisted mainly of vascular puncta closely set in clusters and groups. In many places the puncta coalesced to form large maculopapular formations. These vascular papules were found scattered all over, in many hundreds, as component parts of the annular lesions to be described later. Many of these lesions conveyed a suggestion of purpuric lesions except for the fact that the characteristic successive color changes of blood pigment to be found in true purpura were absent.

(2) Stellate lesions. One of the most profusely distributed types of the lesions was the stellate. These could be easily singled out from the general design of the skin eruption by the striking resemblance to the spider type of nevus, i. e., nevus araneus. The spider-like lesions were scattered in large numbers, predominantly on the trunk of the body, and much less on the limbs, where the annular and serpiginous lesions predominated. In contradistinction to vascular puncta and annular and serpiginous lesions, the stellate lesions were much less sharply differentiated from the surrounding normal skin. In places where two or more spider lesions coalesced they formed ill defined meshes of vascular network which, from a distance, appeared as diffuse reddish areas.

(3) Annular or serpiginous lesions. The most spectacular lesions observed in the case were those of the serpiginous type. These lesions varied in size from a small sea shell to from 2 to 5 inches (5 to 12.7 cm.). They were particularly conspicuous on the limbs where they attained their largest size. Pictorially, from a distance, they roughly suggested tinea or gigantic pityriasis rosea.

The active borders presented a contrast with the pale central part. The edges consisted of vascular puncta, closely but irregularly set, and in many places coalesced into larger vascular papules, slightly elevated and distinctly perceptible to a palpating finger. The central areas presented a uniformly brownish or yellowish pigmented surface without a suggestion of atrophy or scarring.

Clinically, there was no relationship of the lesions with the hair follicles. Under diascopic pressure, the lesions did not pale and changed but little in depth of color.

Regional Description.—The face was free from lesions. The neck presented only a few faintly outlined, irregularly grouped, vascular puncta.

The chest under the right clavicle showed a large annular lesion, apparently beginning to fade. Several small satellite lesions were seen near the borders of the large patch, and scattered irregularly on the frontal aspect of the chest. The left side of the chest showed from ten to fifteen punctiform and stellate vascular lesions and one large, 1 by 3 inches (2.5 by 7.6 cm.), annular, reddish and yellowish brown lesion, apparently fading. The right side of the chest showed a few stellate and small annular vascular lesions.

While the extensor surface of both forearms was free, the flexor surface showed multiple lesions of three types: (1) solitary large vascular puncta sur-

rounded by many minute satellites; (*2*) small and larger round and annular lesions consisting of solitary and coalescent vascular puncta; (*3*) reddish, diffuse, irregular in shape, and many stellate lesions.

The abdomen showed scattered, faintly outlined punctiform and stellate vascular lesions.

The penis and scrotum showed considerable involvement, both on the shaft and the gland—about twenty or thirty dark reddish, linear and irregularly shaped patches, and under a magnifying glass clearly showed punctiform vascular network.

Fig. 1.—Lesions of Majocchi's disease on the arms; the black patch on the right arm is the site of a biopsy.

The back showed considerable involvement. On the regions of both shoulder blades, there were a few large and many small annular lesions. The median lower region and sacrum showed a group of small annular lesions of deeply stained vascular puncta of purpuric hue.

The lower limbs showed the most intensive involvement. The inner surface of both thighs showed a number of small various sized and large annular lesions. A gigantic annular patch, *2* by 5 inches (5 by 12.7 cm.) was, according to the

patient's statement, the first lesion to appear and stayed alone for several weeks. At the time of examination, it showed a faint yellowish, brownish, diffuse, cloud-like center, and reddish borders still showing the original punctiform vascular design. The extensor and flexor surfaces of both thighs also showed a number of round, smaller and a few large annular lesions.

Both legs showed an extensive involvement, the whole area being covered with a large number of small, round, annular lesions of bright red and purpuric-looking

Fig. 2.—Lesions of Majocchi's disease on the back.

vascular puncta closely packed in the borders of large lesions; a number of small stellate lesions were scattered in between.

The dorsa of the feet showed a few stellate, vascular lesions. The soles were entirely free.

There were no varicose veins or other circulatory disturbances.

Course.—The subsequent course of the case was unexpectedly rapid and uneventful. The three weeks after the patient came under observation the skin eruption began to involute rapidly without any local treatment or other systemic attention except the treatment of the prostatitis by the attending physician. Two months later,

the prostatitis was pronounced cured clinically and microscopically. By that time, the skin eruption had cleared up completely, leaving faint patches of brownish pigmentation without any suggestion of clinical atrophy or scarring. Shortly afterward, the patient left the city.

Microscopic Examination.[1]—The stratum corneum was thickened moderately. The stratum granulosum did not show any changes from the normal. In the rete

Fig. 3.—Lesions of Majocchi's disease on the legs, showing extensive involvement.

mucosa there was intercellular edema, which spread the cells apart; some of the cells were swollen and vacuolated. The pegs were not particularly changed except in areas where there was a distortion of the basal layer due to the encroachment of the cellular infiltrate.

1. The microscopic report was prepared by Dr. Norman Epstein, of San Francisco.

There was an actual increase in the number of blood vessels in the corium and a tendency toward grouping. The endothelium of many of these vessels was swollen and distorted, encroaching somewhat on their lumen. The venules in general were dilated. There was some diapedesis of the red cells and an occasional minute hemorrhage near the blood vessels. A cellular infiltrate composed

Fig. 4.—Lesions of Majocchi's disease on the legs.

mainly of lymphocytes and plasma cells accompanied the sebaceous and coil glands and to a more marked degree the blood vessels.

The subcutaneous tissue was unchanged from the normal.

With the polychrome methylene blue stain, the structure of the cells could be studied more carefully and confirmed the impression that the infiltrate in the corium was composed of lymphocytes and plasma cells. With the prussian blue stain, small particles of bluish staining material could be made out, undoubtedly iron-containing pigment.

The main changes were found in the corium, where there was a moderate endarteritis and endophlebitis accompanied by a mild inflammatory reaction. The epidermal changes were of minor importance.

The photomicrographs showed:

1. The high power lens (hematoxylin and eosin stain) showed intercellular edema, an irregular basal layer and a scale over the surface (figs. 6 and 7).

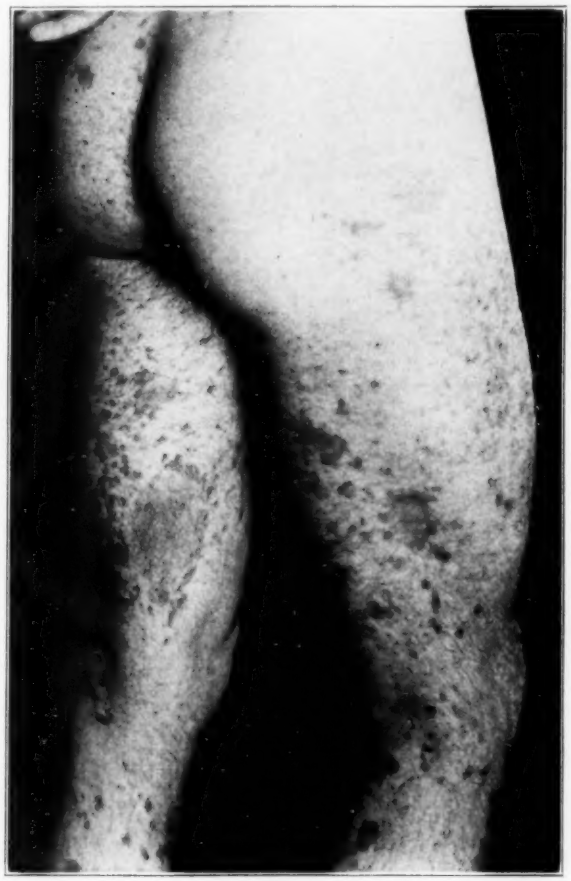

Fig. 5.—Lesions of Majocchi's disease on the legs.

2. The oil immersion showed the same as number 1 (figs. 8 and 9).

3. The low power lens (hematoxylin and eosin) showed the epidermis and corium with the cellular infiltrate and increased formation of blood vessels (fig. 9).

4. The high power lens (hematoxylin and eosin) showed the blood vessels with swollen endothelium; dilated venules, and cellular infiltrate.

5. The oil immersion (polychrome methylene blue) showed the cellular infiltrate and the endothelial lining of the blood vessels.

6. The high power (prussian blue reaction) showed small particles of iron-containing pigment[2] (fig. 11).

Diagnosis.—The morphologic picture of the eruption was so strikingly unique, and the lesions showed so clearly their telangiectatic character that only few dermatoses of this group came into consideration. The first tentative diagnosis was angioma serpiginosum. However, the development of such an extensive eruption in a comparatively short period of five months, the purpuric hue of many vascular puncta, the localization of the original annular lesions on the lower extremities and, particularly, the rather subsequent sudden involution and fading of the eruption caused the diagnosis to be changed to Majocchi's disease.

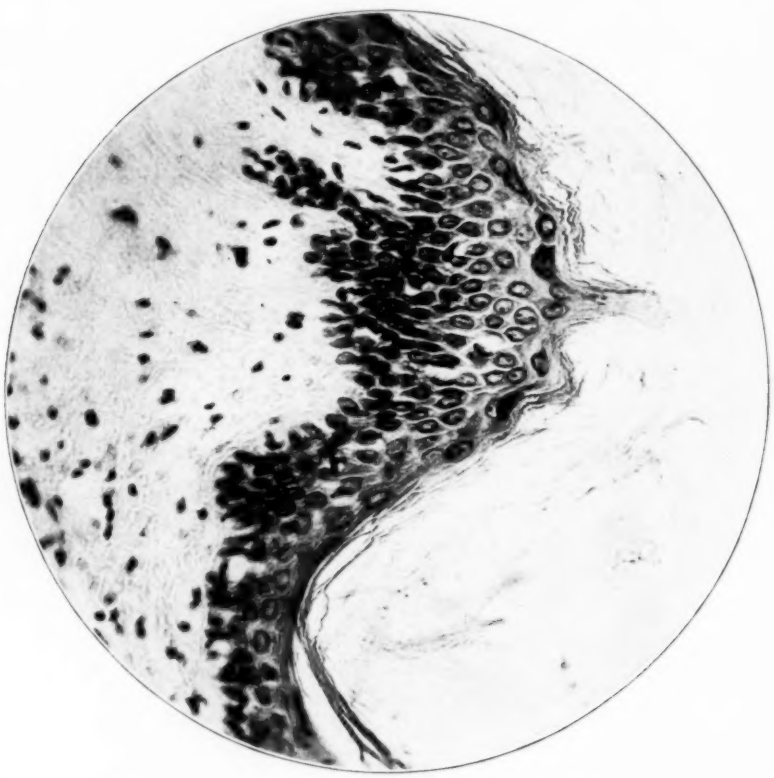

Fig. 6.—High power photomicrograph, showing intercellular edema, irregular basal layer and scale over the surface of the epidermis.

The lack of unanimity displayed in the literature, in the clinical and microscopic portrayal of the two diseases has led me to analyze the whole

2. Subsequently the microscopic slides were submitted to Dr. George MacKee, of New York, for interpretation. Dr. MacKee has expressed himself in favor of the microscopic diagnosis of the Majocchi disease, citing as observations, microscopic hemorrhages, perivascular infiltration, increase and grouping of blood vessels and evidence of endarteritis.

problem of morphologic differentiation between Majocchi's disease and angioma serpiginosum and to restudy all of the material available in the literature on the subject.

MacKee's was the first comprehensive analysis of the literature on Majocchi's disease up to 1915. Wise has contributed a similar comprehensive discussion and analysis of the literature on angioma serpiginosum.

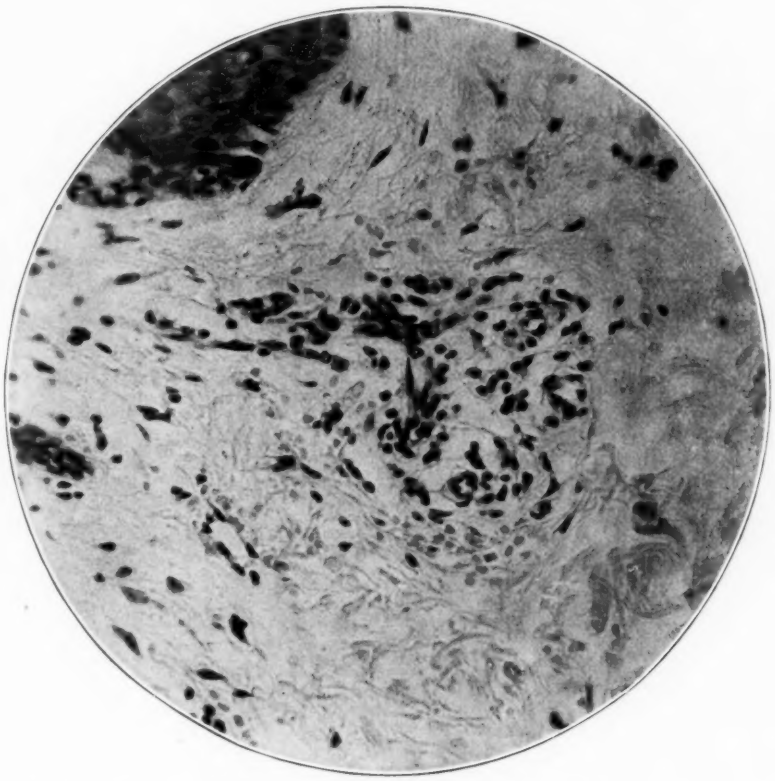

Fig. 7.—High power photomicrograph, showing intercellular edema, irregular basal layer and scale over the surface of the epidermis.

SURVEY OF THE LITERATURE

Up to 1915, the bibliography of Majocchi's disease was extensively quoted by MacKee [3] in his case report, in which he cited thirty-eight cases. Since then, according to Balzer, about twenty-five more cases have been reported, making a total of sixty-three cases. The most important among them and those available in the original are as follows:

3. MacKee, G. M.: J. Cutan. Dis. **33**:129, 1915.

In 1917, Rusch [4] presented a case, before the Vienna Dermatological Society, which was mildly suggestive of Majocchi's disease, in a girl with gonorrhea and an apical infection of tuberculosis. The lesions were on the legs and thighs. There were neither telangiectasies nor annular lesions; however, there was some lichenification present. The diagnosis was not accepted by the discussants.

The same year Oppenheimer [5] presented a patient who had typical Majocchi lesions on the legs, with succeeding yellowish brown discolorations.

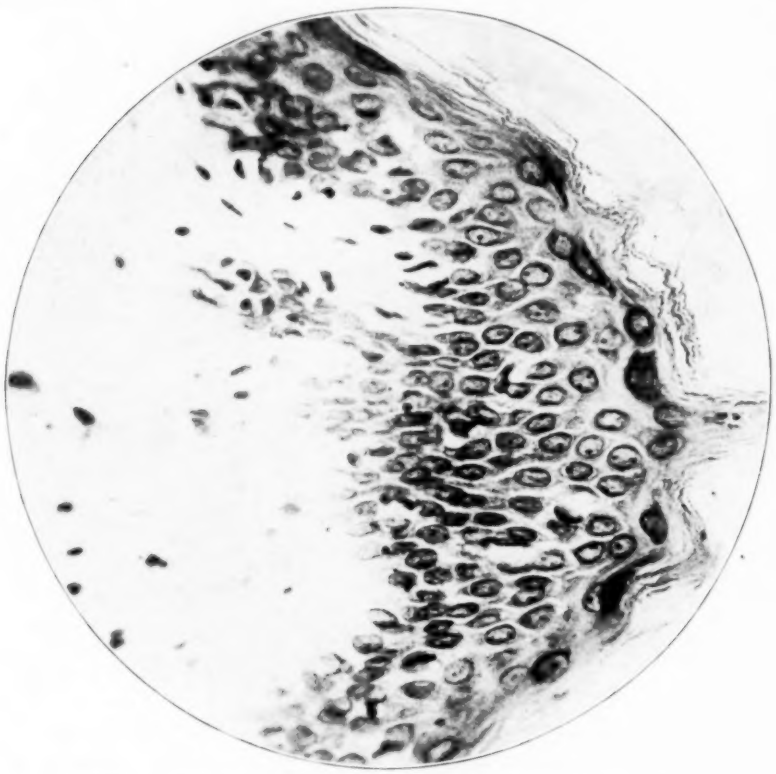

Fig. 8.—Oil immersion, showing changes in the epidermis.

In 1918, MacKee [6] reported an additional typical case of Majocchi's disease presenting telangiectatic puncta, and annular lesions on the buttocks and thighs with yellowish brown centers without atrophy. Histologic examination revealed a numerical increase of blood vessels,

4. Rusch: Wien. klin. Wchnschr. **30**:767, 1917.

5. Oppenheimer: Wien. klin. Wchnschr. **30**:1151, 1917.

6. MacKee, G. M.: J. Cutan. Dis. **36**:1151, 1918.

moderate round cells, focal infiltration, thickening of the vascular walls, pigmentary remnants of hemorrhage but not degeneration.

In 1920, Highman [7] presented a case of Majocchi's disease of three years' duration before the New York Dermatological Society in a woman, aged 43. The lesions consisted of the punctate purpuric spots, hemorrhagic plaques and a slightly infiltrated roughened surface with a slight tendency to scale. It was diagnosed previously by Scheer as Schamberg's disease and by Whitehouse as eczema. However, MacKee and

Fig. 9.—Low power photomicrograph, showing epidermis and corium, with cellular infiltrate and increased number of blood vessels.

Wise considered it Majocchi's disease, although not typical. In the discussion, MacKee stated that up to that time only two typical cases of Majocchi's disease had been shown in this country—one by the late Harris of Chicago and the other by Ketron of Baltimore.

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7. Highman, W. J.: Purpura Annularis Telangiectodes, Arch. Dermat. & Syph. **1**:227 (Feb.) 1920.

In the same year, Weiss [8] published an elaborate report of two cases with a detailed microscopic study.

The first case occurred in a man, aged 53. The lesions were on the legs and consisted of purpuric spots with brownish yellowish discoloration. There was only a slight tendency to annular lesions and telangiectasis; there were varicose veins.

The second patient was a woman, aged 44. The lesions were on both legs and consisted of reddish spots, varying in size from that of

Fig. 10.—Oil immersion of corium (polychrome methylene blue stain), showing cellular infiltrate and endothelial lining of the blood vessels.

a pinpoint to that of a pinhead, with a tendency to fade and turn yellow, with new similar lesions appearing above and extending upward. There was also a suggestion of varicose veins.

Microscopic study of the recent lesions revealed edematous, degenerative, connective tissue and fairly marked panarteritis in the vessels of the

8. Weiss, Ludwig: Purpura Annularis Telangiectodes, Arch. Dermat. & Syph. **1**:520 (May) 1920.

deep cutis. Involvement of the hair follicles or other appendages of the skin was not observed either microscopically or clinically.

Strangely, MacKee, who saw both cases, did not accept the diagnosis of Majocchi's disease and considered it purpura associated with varicose veins.

In the same year, Verrotti [9] reported an extremely interesting case of Majocchi's disease in a woman, aged 40, who had a large uterine fibromyoma. The eruption consisted of punctiform and annular telan-

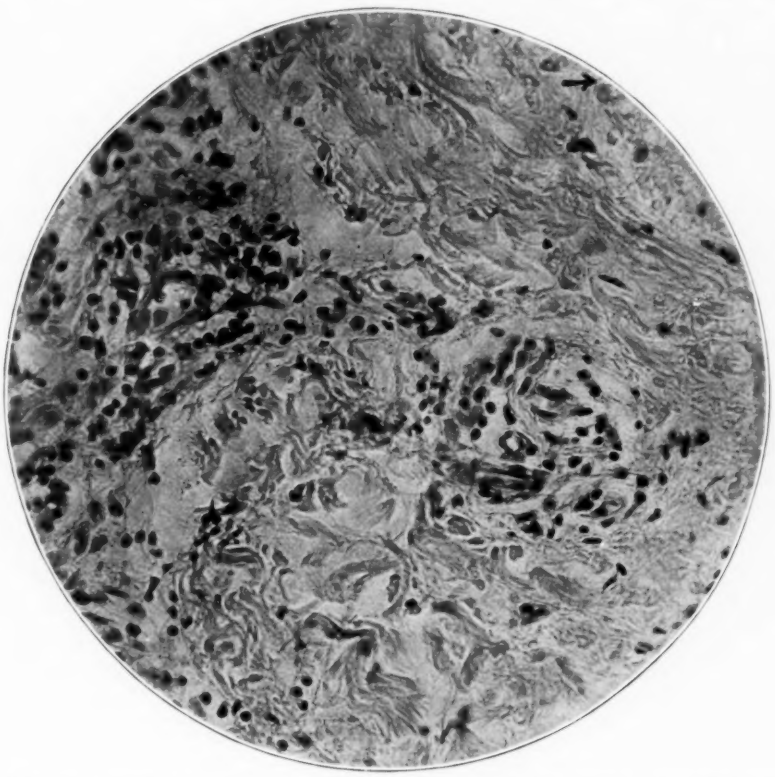

Fig. 11.—High power photomicrograph (prussian blue stain), showing small particles of iron-containing pigment which are indicated by the arrow.

giectatic lesions peculiarly limited to the abdominal region. The lesions of the skin cleared up completely after the extirpation of the fibromyoma. Verrotti tried to explain the development of the lesions of the skin through trophoneurotic influences by the pressure of the uterine tumor on the nerves of the sympathetic system.

9. Verrotti, G.: Riforma med. **36**:145, 1920.

In 1921, Semon [10] presented before the British Royal Society a case suggestive of Majocchi's disease, in which there was a history of recurring rheumatism. The lesions consisted of annular petechiae on the legs.

In 1921, Edel [11] reported a case of Majocchi's disease in a woman. The telangiectatic and annular lesions on both legs showed fading, with subsequent brownish pigmentation; follicular involvement was noted but not atrophy.

In 1922, Irvine [12] presented a typical case in a woman. The lesions were on the legs and thighs.

In 1922, Nobl [13] also reported a case in a woman, aged 40, subject to a manic depressive state, of five years' duration. The lesions were located on the legs, chest and back and consisted of punctiform and annular telangiectasias, red, yellowish and brownish spots; neither atrophy nor follicular involvement was noted.

In 1923, an exceedingly significant and interesting case report of six additional cases was published by Majocchi.[14] Some of these cases were in the early stage and some in the state of involution.

The first case was that of a woman, aged 24, who had punctiform and annular lesions on both lower limbs; the lesions cleared up spontaneously. Six years later, she had a recurrence with follicular involvement. The second patient was also a woman, aged 43, who had punctiform and annular lesions on the lower limbs. The third case was that of a woman, aged 33, who had typical lesions and recurrence following a suppression of lactation. The fourth patient was in a woman, aged 47, who also had a recurrence. The fifth case occurred in a man, aged 31; the sixth in a man, aged 52.

As a result of the study of these cases, Majocchi stressed the fact that both telangiectases and hemorrhages are coexistent as a constant feature. Microscopically he found perivascular infiltration, attenuated epidermis, diminished elastic tissue, atrophied follicles, minute hemorrhagic foci around the capillaries of subpapillary strata and proliferation of endothelium in the capillaries. On the contrary, in the deep and middle layers of cutis it was rare to find hemorrhagic foci; small veins seemed to be dilated and engorged. There was not any endarteritis either in the middle or in the deep cutis.

The histologic study confirmed a perfect restitution ad integrum of the skin. Microscopic hemorrhagic foci were not recognizable clinically.

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10. Semon: Proc. Roy. Soc. **14**:8, 1921.

11. Edel: Urol. & Cutan. Rev. **25**:460, 1921.

12. Irvine: Purpura Annularis Telangiectodes, Arch. Dermat. & Syph. **5**:680 (May) 1922.

13. Nobl: Zentralbl. f. Haut. **4**:97, 1922.

14. Majocchi: Gior. ital. di mal. ven. **64**:125, 1923.

In a discussion of the cases of Majocchi's disease, Pasini cited a case of a physician in whom Majocchi lesions were produced by mercury used for medicinal purposes. Pasini deduced from this observation the toxic origin of the Majocchi type of lesion.

Incidentally, Pasini explained, through the destructive qualities of alcohol, the difficulty of the demonstrability microscopically of the hemorrhagic foci which are seemingly recognizable clinically. For this reason he preferred formaldehyde and Zenker fluid.

In the same year, Wise presented a case of ten years' duration in a patient who showed pigmentations and pinpoint telangiectatic spots on the arms. There was also a reticular livido of the extremities.

In 1924, Back [15] reported a mildly developed case of Majocchi's disease. In the microscopic study he found vascular dilatation, perivascular cellular infiltrate, pigment and damaged endothelium.

Wohlstein [16] also reported a mild circumscribed case of Majocchi's disease in a patient with heart disease who was also a bleeder. The lesions were on the legs. A microscopic report was not made.

In 1925, Fanti [17] reported a case. In 1925, Dore [18] reported a mildly developed circumscribed case. Small hemorrhagic points, in places enlarged to dark red macules the size of a pea, were localized mainly on the arms and legs; there were a few lesions on the thighs and abdomen. Microscopically, Dore found perivascular infiltration; he did not find evidence of microscopic hemorrhage or thrombosis, or of thickening or degeneration of vascular walls.

The three stages were not marked in his case, neither was the annular shape. Dore considered his case as the first case of Majocchi's disease published in England.

In 1927, the most recent case suggestive of Majocchi's disease was reported by Throne,[19] who presented a case before the Brooklyn Dermatological Society. The patient, a man, had an irregular telangiectatic condition; small angiomatous, annular lesions, atrophy and pigmentation of both ankles. The condition was of two years' duration.

MORPHOLOGY

Among the basic morphologic features of Majocchi's disease, as originally portrayed by Majocchi and restated by MacKee, are the three accepted stages (1) telangiectatic, (2) purpuric-pigmentary and (3) atrophic.

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15. Back, R.: Dermat. Wchnschr. **78**:693, 1924.
16. Wohlstein, E.: Dermat. Wchnschr. **79**:848, 1924.
17. Fanti, D.: Gior. ital. di dermat. e sifil. **66**:1377, 1925.
18. Dore, S. E.: Brit. J. Dermat. **37**:263, 1925.
19. Thorne: Purpura Annularis Telangiectodes, Arch. Dermat. & Syph. **16**:798 (Dec.) 1927.

The analytic study of the reported cases of Majocchi's disease shows, however, that the complete cycle of the three stages can be observed only in a certain percentage of cases and is far from being a regular, constant and fully developed feature. The telangiectatic state is the only constant state observed in all cases.

Hemorrhagic-Pigmentary Stage.—As to the purpuric, i.e., hemorrhagic-pigmentary stage, its component elements should be considered separately.

The yellowish brown pigmentation, the result of decomposition of the blood pigment and deposit of hematosiderin, was observed in the majority of cases and can also be accepted as a fairly constant feature. As to the purpuric, i.e., hemorrhagic element, its gross cinical presence is rather assumed than actually present. MacKee stated that "Majocchi disease is essentially not a purpura but telangiectasia."

The absence of the characteristic complete cycle of the change of of blood pigment seen in common purpura, and its reduction in Majocchi's disease to a yellowish brown pigmentation could mean, according to Unna, only extremely superficial petechiae reaching into the epidermis, where, because of a lack of lymphatic absorption, the blood retains its red color for a long time.

Apparently many observers were led to consider the telangiectatic puncta purpuric because they did not empty and only paled off slightly. According to Unna the diascopic pressure test is not conclusive because many perpendicularly ascending capillary replete loops cannot be emptied by pressure, and remain as dark red points.

The most significant confirmation of clinical inconstancy and incomplete development of the purpuric stage in cases of Majocchi's disease is the difficulty in demonstrating microscopically the presence of hemorrhage.

MacKee stated that often the paucity of hemorrhage found in histologic sections is not in accord with the apparent amount of clinical hemorrhage. To explain this discrepancy, MacKee cited Unna's observation that thrombosed or angiectatic superficial capillary loops may simulate hemorrhagic puncta.

It seems that the majority of the writers, possibly influenced by the name of purpura telangiectatica, use the anatomic term "purpuric" to describe the deep red purpura-like hue of telangiectatic puncta and then interpret it in an anatomic sense.

This confusion and substitution of anatomic terms for descriptive terms has been well brought out by Wise [20] in his contribution on angioma serpiginosum. This substitution explains well the cited surprising paucity and inconstancy of microscopic hemorrhage in the presence of the alleged clinical purpuric lesions.

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20. Wise, Fred: J. Cutan. Dis. **31**:725, 1913.

In his last contribution in 1923, Majocchi,[14] stated that microscopic hemorrhagic foci were not recognizable clinically.

The observations and arguments cited seem to warrant an inference that the purpuric element in Majocchi's disease is not a primary and basic pathologic process occurring in all lesions, but is merely an incidental and secondary feature occurring in some of the lesions as an expression of the intensity of the inflammatory process just as it occurs in other types of inflammatory dermatoses.

Atrophic Stage.—The atrophic stage seems to be the least constant feature of Majocchi's disease. MacKee stated that it was definitely present in only fifteen of thirty-eight cases, and added to this number nine more potential or doubtful cases in which atrophy may have been present but not recorded. To me, this evaluation of the presence of atrophic lesions seems to be liberal. In the literature, as cited in MacKee's article, I could find only nine cases with a definite statement of atrophy. In the rest of the cases, atrophy was denied or not recorded. In about twenty-five cases of Majocchi's disease reported since MacKee's contribution, although some of the reports are fragmentary and a few are missing, a positive statement of atrophy is made in only three cases. Among them are two cases reported by Weiss, which MacKee does not regard as Majocchi's disease.

Strange to say, Majocchi himself, in his latest publication of six additional cases does not record atrophy as a clinical feature in these cases. Thus, the atrophic stage, at best, is observed only in the minority of cases and cannot be considered as one of the regular constant features and diagnostic requisites of Majocchi's disease.

As MacKee correctly remarked, the final results probably depend on the severity of the attack and the recuperative power of the tissues.

In his last contribution of 1923, Majocchi also stated that microscopic study confirms the possibility of a perfect restitution ad integrum of the skin in early cases. Yet many writers continue to describe the atrophic stage as one of the basic characteristics of the Majocchi syndrome and continue to base their differential diagnosis on the presence or absence of this extremely inconstant clinical feature.

HISTOLOGY

Neither can the histologic picture of Majocchi's disease be definitely settled. The most constant feature found practically in all cases is perivascular lymphocytic infiltration, which fact stamps Majocchi's disease definitely as an inflammatory angiodermatosis.

Other microscopic features, such as follicular involvement and atrophy, were either not observed or not mentioned in many of the reported cases. Even endarteritis and endophlebitis, which were

regarded by many as fundamental differential features of Majocchi's disease, were not found in some cases. In fact, in his last contribution, Majocchi stated that he did not find endarteritis in either the middle or the deep layers of the skin.

The difference of the microscopic observations in different cases apparently depends on the earlier or later stage of the condition in which biopsy was made, and also on the degree of intensity of the toxin.

PATHOGENESIS

In his contribution of 1913, MacKee stated that the etiology of Majocchi's disease is unknown, except that syphilis and tuberculosis are definitely excluded. However, recent observations suggest that etiology can be variable. Thus, infected tonsils proved to be variable. Infected tonsils proved to be responsible in Lier's case. In his case report of 1923, Majocchi [14] cited a case in which the attack was brought on by the suppression of lactation. Pasini reported a case in which the attack was precipitated by mercury taken for medicinal purposes. Verrotti reported a case of Majocchi syndrome induced by a fibroid abdominal tumor. In 1926, Balzer[21] attempted to advance a tuberculous etiology for Majocchi's disease, basing his argument on positive tuberculin tests in several cases and on various biochemical and experimental considerations and associated tuberculous pathologic changes in these cases. Finally, in the present case gonorrheal prostatitis was found to be the sole etiologic factor.

Summarizing the foregoing evidence, the following portrayal of Majocchi's disease seems to be warranted.

Majocchi's disease is a well defined clinical entity. Its basic morphologic lesions are bright and dark red telangiectatic puncta, at times simulating purpura. These puncta spread by extension through satellite lesions and gradually assume annular form. The central part of these annular lesions fades, leaving brownish, yellowish pigmentation. Scars or slight atrophy may or may not result. Follicular involvement is common but not by any means constant. Histologically, it is characterized by perivascularity, a low grade inflammation, and often, but not always, by microscopic hemorrhagic foci. In many cases various degrees of endarteritis and endophlebitis are observed. Relapses are possible. It commonly starts on the lower extremities, but may spread to the trunk and upper limbs, and become generalized. Involution of the condition is comparatively rapid and may take from six months to a year.

Etiologically, Majocchi's disease is not a definite entity, but a syndrome that may be caused by various infective and toxic agents. Morphologically, it can be considered a variety of toxic erythema affecting specifically the capillaries of the skin.

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21. Balzer, F.: Ann. de dermat. et syph. **7**:529 (Oct.) 1926.

MAJOCCHI'S DISEASE VERSUS ANGIOMA SERPIGINOSUM

As mentioned before, differentiation of Majocchi's disease from angioma serpiginosum is rendered difficult by the fact that the pictures of both angioma serpiginosum and Majocchi's disease, as clinical and microscopic entities, are not definitely settled. Several English writers, such as Crocker, Colcott Fox and Weber, are inclined to regard them as being identical.

The original description by Hutchinson was merely a tentative clinical portrayal which, apparently, he had difficulty to separate and differentiate from a telangiectatic form of lupus erythematosus and progressive nevus.

Subsequently, Crocker redescribed the condition and christened it with the name of angioma serpiginosum which was universally accepted as more descriptive of the clinical picture.

It would seem that among twenty-two cases cited by Wise [20] as angioma serpiginosum, there are several, which are portrayed by Hutchinson and Crocker that do not conform to type and should be taken out of this group.

Thus, the second case reported by Hutchinson apparently was a case of lupus erythematosus telangiectaticus. Hutchinson described it as a "very chronic serpiginous inflammation of the skin, clearly infectious, with delicately tuberculated or lichenoid borders and forming pale thin scars." He stated that "the features of lupus family resemblance present in the case are more important than the differences." The sixth case of White was proved microscopically to be angiosarcoma, i.e., perithelioma. The case reported by Walsh, evidently, was one of Majocchi's disease. The patient had a fresh acute recurrence attended by some systemic upset with diarrhea. It started almost immediately after an attack of rheumatic fever. Also the eighth case reported by Hutchinson is rather suggestive of lupus erythematosus as he described "dry adherent scale crust." Finally, the case reported by Morris seemed to be definitely Majocchi's disease because of the croplike breaking out, rapid development within a period of three months and brownish yellow discoloration. The exclusion of these five cases would reduce the number of cases, cited by Wise as angioma serpiginosum, to seventeen.

ANGIOMA SERPIGINOSUM VERSUS MAJOCCHI'S DISEASE

Eleven of these seventeen cases are definitely nevoid or can be reasonably assumed to be such, since they started at birth or in early childhood (none of which started later than the age of 3 years) and, with the exception of only two cases, in which a tendency to spontaneous involution was shown, continued their steady extension and growth.

It is of interest to note that three cases reported by Wise as angioma serpiginosum differed widely in major clinical and microscopic characteristics from the original type of Hutchinson and Crocker. All three of Wise's cases started in adult life, all three presented itching and scaling—the features not recorded by Crocker and others. All three cases presented yellowish, brownish pigmentation—the feature recorded only in two cases reported by Dockerell and Dore. All three presented a feature of atrophy and scarring to a marked degree, a feature mentioned only in one proved case of angioma serpiginosum, reported by Dockerell.

Wise's tabulation of scarring and atrophy as positive in three of four of Hutchinson's first cases does not coincide with Crocker's statement that "in three out of four cases scarring was, certainly, absent and Hutchinson was not sure about it in his fourth case."

Wise's cases differed also in regard to basic morphologic lesions so characteristic of angioma serpiginosum—the telangiectatic puncta. Only the first case presented lesions of this type, although in two small groups, annular lesions were more abundant. The second case presented small groups of puncta, without annular lesions. The third case presented neither puncta nor annular lesions. In contradistinction to discrete, sharply cut lesions of typical angioma serpiginosum, all three of Wise's cases were conspicuous by the diffuse reticulate confluent type of eruption. Furthermore, the microscopic observations by Pollitzer in Wise's case differed radically from all the previous microscopic reports in angioma serpiginosum.

Pollitzer reported low grade perivascular inflammation of the papillary and the subpapillary region with endothelial proliferation and swelling and secondary changes in the epidermis. Wise stated that no sign whatever was found of widely dilated capillaries and venules, as in some forms of vascular nevus, and concluded that the process is in no sense an angioma, but a low grade inflammation.

On the other hand, the only published microscopic reports in angioma serpiginosum, by Roberts, Jamieson and Sequeira, stressed the wide dilatation of vascular loops and the total absence of inflammatory reaction. Jamieson regarded the condition as a superficial nevus.

In view of such sharp clinical and microscopic differences between Wise's cases and those of the rest of the observers, Wise's portrayal and interpretation of angioma serpiginosum in terms of his individual observations hardly seem conclusive.

The analysis and study of the literature prompts me to believe that angioma serpignosum belongs to a nevoid group, and that the Crocker's clinical portrayal, morphologically fits the overwhelming majority of the reported cases. It seems that Wise's cases represent a borderline type

between angioma serpiginosum and other telangiectatic dermatoses rather than clearcut types of angioma serpiginosum.

In the light of present knowledge, the second and third case discussed by Wise and originally presented by G. H. Fox and H. Fox would seem to belong in the group of poikiloderma vasculosum.

On the basis of the foregoing clinical portrayal and definition of Majocchi's disease and angioma serpiginosum, differentiation between these two conditions becomes sharp and clearcut. On this basis, I consider the case presented definitely one of Majocchi's disease.

MAJOCCHI'S DISEASE VERSUS SCHAMBERG'S DISEASE

The relationship of Majocchi's disease to the condition described by Schamberg [22] is a question of great clinical interest.

The general clinical resemblance between Majocchi's and Schamberg's disease has been noted by all. Just as in the case of angioma serpiginosum, some English observers regarded Schamberg's as merely a variant of Majocchi's disease. However, more recent observers, Kingery,[23] McCafferty [24] and Templeton [25] held that Schamberg's disease was an independent clinical entity. They stressed, as an important differential, almost pathognomonic feature, the presence of granules bearing iron pigment, revealed by the prussian blue staining reaction.

Morphologically, the basic lesions of Schamberg's condition, as described by him, are discrete, cayenne pepper, grainlike, punctiform macules, somewhat telangiectatic, spreading through a formation of satellite lesions and gradually fading, leaving yellowish and reddish brown pigmentation. This picture is practically identical with Majocchi's disease except in the absence of annular lesions.

The alleged clearcut differentiation between Majocchi's and Schamberg's disease, as given by McCafferty [24] and Templeton,[25] is based on assumed rather than proved clinical features. As pointed out in a previous analysis, neither purpuric lesions nor atrophy can be accepted as a constant clinical feature of Majocchi's disease any more than of Schamberg's disease.

Turning to the microscopic study, a practically identical picture of low grade inflammation is again found in both, with perivascular cell infiltrate and various degrees of endarteritis and endophlebitis.

The presence of iron-bearing pigment granules so much stressed as a pathognomonic feature of Schamberg's disease is hardly conclusive as, according to literary evidence the prussian blue reaction has never

22. Schamberg: Brit. J. Dermat. **13**:1, 1901.

23. Kingery: J. Cutan. Dis. **36**:166, 1919.

24. McCafferty, J. K.: Schamberg's Peculiar Progressive Pigmentary Disease of the Skin, Arch. Dermat. & Syph. **14**:53 (July) 1926.

25. Templeton, H. J.: Progressive Pigmentary Dermatosis, Arch. Dermat. & Syph. **16**:141 (Aug.) 1928.

been tried in cases of Majocchi's disease. It was tried in the present case (for the first time to my knowledge) and found positive.

As the nature of the granules is of hemosiderin origin, it would be only natural to find them fairly common, in cases of Majocchi's disease, since in this condition the purpuric element must be conceded, at least microscopically.

It is of interest that Schamberg himself, in his original report, could not find pigment granules. He explained this negative result by the early stage in which the biopsy was made.

In this connection the name adopted by Schamberg, "peculiar progressive pigmentary dermatosis" is rather ambiguous, as it conveys a possible suggestion of a progressive accumulation of pigment of a melanotic nature which it does not mean; at the same time it does not describe the basic pathologic and clinical feature—perivascular inflammation and decomposition of hemosiderin.

In view of the foregoing evidence, it is hard to refrain from an impression that Schamberg's dermatosis is in closest pathogenetic and nosologic relationship with Majocchi's disease and is likely to be, if not a variant of Majocchi's disease, at least another closely related member of the family of inflammatory telangiectatic dermatoses.

For the same reasons, Schamberg's disease can be sharply differentiated from angioma serpiginosum which is, in my opinion, a nevoid progressive capillary proliferation.

POIKILODERMA ATROPHICANS VASCULOSUM

Still another member of the telangiectatic group of deramtoses can be properly considered here—poikiloderma atrophicans vasculare, which was described for the first time by Jacobi,[26] in 1896.

The clinical resemblance of poikiloderma to other telangiectatic dermatoses is well illustrated by the fact that two cases presented by Williams and Wertheimer, in 1927, as angioma serpiginosum were regarded by others as poikiloderma. Lane,[27] in reporting his first American case of poikiloderma, recognized this fact. The number of cases of poikiloderma so far reported is so small that the last word on it cannot be expected. Unquestionably, it comes close to atrophodermas. Yet it is also apparent that atrophy is not a primary process but secondary to the inflammatory vascular changes.

The basic morphologic lesions observed in poikiloderma-telangiectasias, pigmentations, capillary hemorrhages, atrophy and microscopic features of inflammatory and atrophic stages, perivascular round cells,

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26. Jacobi: Iconographia Dermatologica, 1908, vol. 3.

27. Lane, J. E.: Poikiloderma Atrophicans Vasculare, Arch. Dermat. & Syph. **4**:563 (Nov.) 1921.

infiltration and endarteritis certainly indicate a close relationship to Majocchi's disease, although the process seems to be much deeper and much more destructive than that of Majocchi's disease.

There are other clinical types of telangiectatic dermatoses, such as congenital generalized telangiectasias associated with purpuric changes and telangiectasias, associated with syphilis. However, their pathogenesis and clinical behavior are entirely different, and they should be kept apart.

SUMMARY

A case of Majocchi's syndrome of gonorrheal origin is reported. The morphology and pathologic changes are described and differentiated from angioma serpiginosum, Schamberg's disease and poikiloderma vasculare atrophicans. An opinion is advanced that angioma seripiginosum is a progressive nevoid, capillary, proliferation of the skin differentiating it from Majocchi's disease, Schamberg's disease and poikiloderma, which are inflammatory angiodermatoses. It is also suggested that Majocchi's disease, Schamberg's disease and poikiloderma have many morphologic and pathologic featuers in common and are, if no variants of the same pathologic process, at least closely related members of one large group of inflammatory angiodermatoses of the skin.

ABSTRACT OF DISCUSSION

DR. GEORGE M. MACKEE, New York: It will save confusion if we refrain from employing the term Majocchi's disease as a synonym for purpura annularis telangiectodes, because another disease is known as Majocchi's disease. It is preferable to give the name of the disease in full or to designate it as Majocchi's purpura. The subject is a confusing one largely because many cases have been reported in the literature that are not bona fide examples of purpura annularis telangiectodes. These include cases of Schamberg's progressive pigmentation, Klotz's dermatitis hemostatica, annular purpura simplex, unclassified examples of telangiectasia, etc. I am inclined to think that some of Dr. Scholtz's deductions are based on an analysis of these erroneous case reports by authors who have attempted to broaden the conception of this disease beyond what to me seems a logical degree. I read Dr. Scholtz's paper, studied the histologic sections and saw the photographs. I think that his case can be accepted as a true example of this uncommon dermatosis. Unfortunately, Dr. Scholtz removed only one piece of tissue which represents only the first stage of the disease. In this stage the pathologic histology is not pathognomonic, the principal features being, as in this case, a numerical increase and grouping of dilated and edematous capillaries with hemorrhages, and perivascular infiltration of round cells. In the second stage there are masses of pigment, panarteritic and increased infiltration. It is in the third stage that the really typical histologic feature is encountered, the feature that is necessary to make a positive diagnosis, namely, hyaline degeneration of the walls of the blood vessels. In addition, the vessels are decreased in number, and there may be some degeneration and atrophy of the connective tissue, appendages and epidermis.

It is doubtful if more than six or eight unequivocal cases of purpura annularis telangiectodes have been reported in this country. Harris, Parounagian, Mitchell and MacKee and Wise (three patients) have reported typical cases, and Ketron

(unreported) had one that was perfect in every respect. I have studied many of these cases (including Ketron's) and they are identical as far as concerns the chief characteristics, provided that they are studied both clinically and histologically for a period that covers evolution and involution and which includes, preferably, more than one attack. It is especially necessary to make biopsies during each of the three stages of the disease. The histology was the same in all of these cases and, with the exception of minor details, the clinical picture was the same. One essential feature is that the disease is one of exacerbations and remissions, the former covering a period of from six weeks to three months, and the latter varying from several weeks to several months or even a year or two. The attacks are divided into fairly distinct stages—telangiectatic-purpuric and pigmentary-atrophic. Of course, annular lesions are present in every case. It would seem that the characteristics of the disease are sufficiently distinctive for identification. Aberrant and doubtful cases should be carefully studied and published, but not as bona fide examples of purpura annularis telangiectodes unless the clinical and histologic evidence distinctly warrants such a report.

Dr. James Herbert Mitchell, Chicago: I have been extremely interested in this subject because at a number of dermatologic meetings in the past few years cases, which I have recognized as Schamberg's disease, have been presented as purpura annularis telangiectodes. My conception was never clear about this condition until I had an opportunity to study a case three years ago. A man had numerous lesions scattered over the legs and trunk, and had all the four cardinal points. The eruption had been present for a number of years with attacks and partial remissions. The use of calcium lactate had improved the condition to a large degree, but probably this was coincident with a temporary remission. Dr. Ormsby and several other Chicago men saw this case. We secured a section and found all the changes one expects to find in this disorder.

Dr. Fred Wise, New York: I agree with Dr. MacKee that Dr. Scholtz has clearly demonstrated to us an excellent example of Majocchi's disease. As to the differential diagnosis, it is fully justifiable to differentiate Majocchi's disease, in a purely academic sense, from angioma serpiginosum, Schamberg's progressive pigmentary dermatosis and poikiloderma vasculare atrophicans. But in practice, these diseases do not bear a strong physical resemblance to purpura annularis telangiectodes. Little is known about the clinical and histologic features of angioma serpiginosum. Only a few bona fide cases are recorded, and even these do not run true to form. In angioma serpiginosum, there is not true atrophy of the epidermis, although there might be a suggestion of wrinkled atrophic skin; this is discernible only if the light strikes the skin at a favorable angle. Angioma serpiginosum is a progressive disease or condition, associated with obvious vascular dilatations; Majocchi's disease is characterized by remissions and exacerbations, and is not progressive, and true atrophy occurs in older lesions.

In regard to Schamberg's disease, there again the differential diagnosis requires consideration only in such a case as that described by Dr. Mitchell, in which the pigmentation spread over the body. Schamberg's disease usually is confined to the legs. The dermititis, in which rust colored stains appear on the lower extremities, described by Dr. Klotz as dermititis hemostatica, should be differentiated from Majocchi's disease on theoretical rather than on practical grounds. In poikiloderma atrophicans vasculare, there are so many different clinical pictures, depending on the time that the patient is seen and the duration of the disease, that differentiation here hinges chiefly on the histologic features and the interpretations of the lesions that exist when the patient first presents himself. What I wish to emphasize, and what Dr. MacKee has already stressed, is that in Majocchi's disease one is dealing

with a condition characterized by exacerbations and remissions; there may or may not be atrophy, depending on the duration of the lesions. The lesions do not show a tendency toward progression as do those of angioma serpiginosum, Schamberg's disease and poikiloderma vasculare. Nevertheless, differential diagnosis in indicated, as Dr. Scholtz has demonstrated in his paper.

DR. MOSES SCHOLTZ, Los Angeles: The subject of my paper can serve as a fitting illustration for the chairman's address—"Errors in Dermatology." Purpura annularis telangiectodes, possibly more than any other dermatosis, has suffered because of the routine and passive handling of the literature. Many observers quote the literature without careful analysis, take unproved statements for granted and make clinical deductions on this insecure literary basis. I trust the analysis offered in this paper will help to clarify the confusion in the literature on the subject.

PRIMARY MULTIPLE SARCOMATOSIS OF THE SKIN*

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A case of multiple tumors of the skin was recently reported by Schmidt.[1] The condition resembled grossly mycosis fungoides d'emblée, but proved to be histologically of a neoplastic nature. A marked discrepancy of opinions existed, however, in regard to the interpretation of the histologic observations. Simmonds, who diagnosed the lesion first as a lymphangio-endothelioma, which is usually benign, was later inclined to interpret it as a malignant growth on account of the presence of many mitoses and other malignant characteristics. Jaffé thought that the neoplasm belonged to the group of multiple sarcomas of the skin, while Sternberg expressed the belief that it was an immature multiple carcinoma of the skin, a diagnosis accepted as most likely by Schmidt. We had the opportunity to attend the patient during the final stage of the disease and to perform an autopsy on him. We report our observations to complete the description of this unusual case and to state our opinion in regard to the histologic diagnosis of the tumor.

REPORT OF A CASE

The patient was admitted to Mercy Hospital on June 7, 1927, and died there on Jan. 29, 1928, about thirty months after the appearance of the first node. At the time of his entrance to the hospital the condition of the patient corresponded in general with the description of Schmidt. During the further course of the disease, the number of lesions increased considerably, but at no time during our observation were the nodes so numerous at any place that normal skin was completely absent. Some of them reached the size of a hen's egg. Ulcerations of the size of a silver dollar developed on the forehead, right shoulder and scrotum. Two types of nodes were present. One type of nodular formation was characterized by a smooth, thinned, bluish-red epithelial covering which had a hard consistency. It showed a marked tendency toward ulceration. The nodes of the second type, which were especially frequent on the toes and abdominal wall, were shiny, glazed and yellowish and were covered by a thick, cornified cap about 1 cm. thick. Nodes of both types were not attached to the underlying tissue. Besides these nodular formations flat, irregular, firm, red elevations which were well demarcated against the normal skin were present. They frequently surrounded the nodes and apparently represented initial stages of the

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1. Schmidt, Frederick Rehm: Multiple Tumors of the Skin Resembling Mycosis Fungoids, Arch. Dermat. & Syph. **18**:231 (Aug.) 1928.

tumor infiltration of the skin. Toward the end of the disease larger areas of the skin, especially of the abdomen and lower extremities, became dry, pale white, firm and doughy (scleredema), probably owing to a diffuse infiltration and blockade of the subcutaneous lymphatic vessels by tumor cells. Moreover, nodes developed at this time in the supraclavicular and inguinal region. Results of examination of the internal organs were negative. Leukocytes, hyaline and granular casts appeared in the urine after Jan. 16, 1928. A blood count taken at this time showed: 1,380,000 erythrocytes; 30 per cent hemoglobin; 3,800 leukocytes; 67 per cent neutrophils; 20 per cent lymphocytes, and 13 per cent monocytes.

Autopsy Observations.—The general appearance of the body corresponded with the description already given. The nodes of the skin appeared on the cut surface as white medullary masses with irregular outlines toward the subcutaneous connective tissues. The cornified caps present in some of the nodes were more or less loosely attached to their base. The pleura was smooth and glistening. The lungs were well distended, reddish gray and covered with a dense, broad, black network. A serous fluid exuded freely from the cut surface on which numerous irregular, solid, grayish red foci were visible. The lymph nodes at the hilum were enlarged and on the cut surface presented a white, bacon-like appearance. The heart, aorta, liver, pancreas, stomach, intestine, suprarenal glands and kidneys did not show any significant changes. The spleen was somewhat enlarged, firm and dark red and showed several dry, deep, dark red, wedge-shaped areas on the cut surface. The mesentery contained numerous small, white, medullary, irregularly-shaped nodules, the size of a pea.

Microscopic examination of the flat, elevated infiltrations of the skin revealed that the squamous epithelium was highly atrophic, consisting often of only two or three layers of spindle-shaped or round cells covered by a thin layer of cornified material. The atrophy of the epithelium extended for some distance beyond the periphery of the neoplastic infiltration underneath. The papillae were narrow and short. Here and there were small groups of large, round tumor cells with round, intensely stained nuclei, and a moderate amount of clear, almost unstained cytoplasm was found either lying in small cavities in the epithelium or forming knoblike indentations into the basal layers. The epithelium was in places almost completely atrophied, and the subepithelial tissue was covered only by the cornified mass. Underneath the epithelium a dense infiltration of the loose connective tissue with the round cells previously mentioned was observed. They were especially closely packed around blood vessels, lymphatic vessels and nerves. The lumina of the small blood vessels were often plugged with tumor cells. The deeper connective tissue was highly hyalinized, and the tumor cells formed small irregular nests and columns in between the strands of the swollen collagenous fibrils and in the dilated intercellular spaces. A second zone of dense tumor cell infiltration was found at the periphery of the subcutaneous fat tissue, which is, however, not readily invaded by the tumor cells. Only small groups of these cells were scantily scattered in this tissue. Mitotic figures were frequently observed in the tumor cells. Lymphocytes were rarely seen in the stroma (fig. 1).

Nodular tumors of the skin with cornified caps were examined. The outermost zone of the node consisted of a more or less homogeneous, pink-stained material which showed in its deeper parts numerous larger and smaller cystic formations filled frequently with a homogeneous, albuminous fluid or occasionally also with erythrocytes. A serous exudate or a hemorrhage often separated the cornified cap often partly or completely from the epithelium underneath. The epithelium itself was made up of several layers of rather small, round, spindle-shaped and spinous cells. Sometimes it was completely lacking, and the cornified cap directly

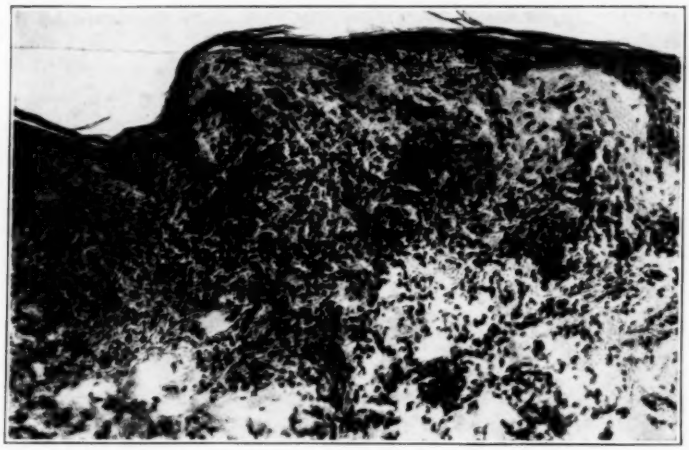

Fig. 1.—Flat elevated infiltration of the skin, showing the atrophic epithelium and the diffuse neoplastic invasion of the subepithelial tissue.

Fig. 2.—Nodular tumor of the skin with thick, cornified cap.

Fig. 3.—Ulcerated nodule with highly vascular inflammatory connective tissue in the superficial central portion and dense perivascular neoplastic infiltrations in the deeper parts of the subcutaneous tissue.

Fig. 4.—Diffuse neoplastic infiltration of a peribronchial lymph node with dilated sinuses and coal dust pigment.

covered the tumor tissue. Long papillary processes of the epithelium into the connective tissue and tumor tissue were not infrequent. Small cornified pearls were occasionally observed in these papillae. The character and arrangement of the tumor cells in the subepithelial connective tissue do not differ from those just described (fig. 2).

In the elevated edge of the ulcerated nodules the same accumulations of round, hyperchromatic cells were found. The neoplastic infiltration of the superficial tissue decreased toward the center of the bottom of the ulcer. It finally disappeared completely, and an inflammatory granulation tissue composed of fibroblasts, lymphocytes, leukocytes and numerous dilated and hyperemic capillaries producing an angioma-like picture took its place. The deeper layers of the subcutaneous connective tissue at the bottom of the ulcer showed the same diffuse, especially perivascular, neoplastic infiltration as present in the nodes. The mechanism of the ulcer formation as indicated by the changes observed was apparently as follows: The epithelium became necrotic due to pressure from the growing tumor and lack of blood supply on account of the compression and invasion of the blood vessels by the tumor cells. In the resulting ulcer the superficial neoplastic tissue has apparently been sloughed off and has been replaced by the vascular granulation tissue already mentioned. The scarcity of a reactive lymphocytic infiltration in the stroma of the tumor and the surrounding tissue was striking (fig. 3).

The small, white, medullary nodules on the mesentery were composed of accumulations of tumor cells diffusely infiltrating the mesenteric fat tissue. There was marked proliferation of capillaries in the adjacent tissue.

In the peribronchial lymph nodes, tumor cells had completely replaced the lymphoid tissue. The sinuses were cystically distended and filled in places with solid masses of tumor cells. Coal dust pigment was present in the stroma. Necroses of tumor cells were small and scanty (fig. 4).

Histologic examination of the other organs did not give any important results, except that it revealed a fresh hemorrhagic infarct in the spleen and arteriosclerotic scars and tubular degeneration of the kidney.

COMMENT

Our observations agree in general with those reported by Schmidt. A discrepancy in both observations and conclusions exists in the following points:

1. We do not consider the flat, red, elevated areas of the skin as involuted parts of the tumor, but, on the contrary, as initial stages of it, as they often precede the node formation and the spreading of the tumor from the nodes into the surrounding tissue. Moreover, histologic examination of these parts did not give any evidence of regressive changes in the tumor tissue.

2. The epidermis covering the tumor tissue was not normal in any of our sections, but always showed definite signs of degeneration and atrophy. The presence of these alterations is also evident in the second illustration of Schmidt, in which the epithelium is thinner than normal and shows definite cystic degeneration, which has been described.

3. Even in sections from early lesions, neoplastic infiltration was not only present in the tissue directly underneath the epithelium, but also in the subcutaneous tissue as well.

4. Dense accumulations of tumor cells around nerves and vessels and invasion of the latter ones by tumor cells were frequent in our sections.

5. A close relation of the tumor cells to the basal layer of the epithelium was not pronounced in our sections. Where such a contact was present, its secondary character seemed to be apparent, as a definite demarcation of tumor cells and epithelial cells was always observed. The increased frequency of mitoses in the rete malpighii and a certain degree of atypia in size and shape of the cells in the basal layer of the epithelium is a change which is not infrequently observed in epithelial tissue which comes in contact or lies in the neighborhood of malignant tissue.

7. The observations of Bierich and Kyrle in regard to the changes in the collagenous tissue cannot be used in support of the carcinomatous character of the growth, as similar experimental investigations in regard to the changes in the collagen preceding sarcomatous growth do not exist.

In conclusion, we may state that we agree with Jaffé that the neoplasm is of mesenchymatous origin, belonging to the group of primary, multiple, round cell sarcomas of the skin. Its exact origin is doubtful. The denser accumulations of tumor cells around vessels and nerves seem to point to these organs as the primary foci. Similar cases have been described by Romanowsky, Brütt, Castex and Meyer.

A NEW MONILIA-LIKE FUNGUS

CHARACTERISTICS OF AN ORGANISM ASSOCIATED WITH A DERMATOSIS PECULIAR TO WORKERS IN CANNERIES *

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In a previous report [1] was presented evidence of the mycotic origin of an occupational dermatosis occurring among workers in certain fruit canneries of the Pacific Northwest. The disease is known locally as "fruit poisoning." At the time the first paper was written, only three strains of the monilia-like yeast had been obtained. Since then, eight additional strains have been added to the collection. In a careful search of the medical literature a description of a similar organism could not be found. The following account of the characteristics of the new fungus will therefore be of interest.

SOURCE AND MORPHOLOGY [2]

The three original cultures were taken in January, 1924, from two patients with paronychia and from one with interdigital erosion, all of whom were infected the previous pear season at the same cannery. Six of the eight new strains were obtained from typical cases of paronychia or of interdigital erosion; a seventh was isolated from a box of pears just delivered to the cannery, and the eighth from a tray of pear parings at the workers' table. The organism was found in all typical lesions from which cultures were taken, but nontypical lesions yielded only bacteria or "wild yeasts." Cultures from conveying belts and vats were negative for the organism. The fact that one of the strains was isolated from a box of pears opens the possibility of the fruit being a source of the infection.

Cells from a twenty-four hour growth on solid mediums were round or oval budding forms, measuring from 5 to 8 microns in diameter.[3] An occasional elongated cell, 5 by 10 microns in diameter, was found. Rarely were true typhae found in young cultures on solid mediums. A definite cell membrane enclosed clear protoplasm con-

* Submitted for publication, Oct. 11, 1928.

* From the Department of Pharmacology, University of Oregon Medical School.

1. Kingery, L. B., and Thienes, C. H.: Mycotic Paronychia and Dermatitis, Arch. Dermat. & Syph. **11**:186 (Feb.) 1925.

2. All the mediums used in these experiments were prepared in the Department of Bacteriology.

3. Thienes (footnote 1, figure 7).

taining an eccentric, highly refractile spherical body which was usually larger in cells grown on acid mediums. This refractile body did not stain with Giemsa's fluid but rather with sudan III and was considered to be a fat globule (figs. 1 and 2). Treatment with a diluted compound solution of iodine demonstrated glycogen granules throughout the cell. Within from forty-eight to seventy-two hours vacuoles filled with a glycogen-free fluid containing one or two chromophilic, coccoid granules in rapid brownian motion appeared in many of the

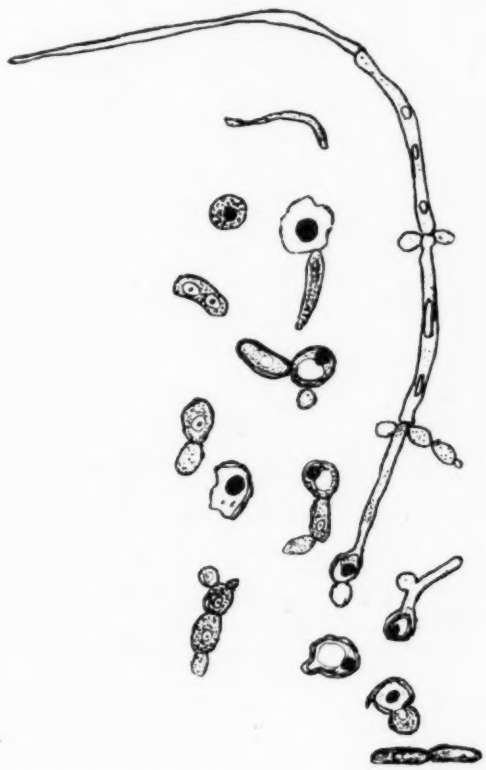

Fig. 1.—Camera lucida drawing of various forms from galactose broth, stained to show glycogen granules. The solid black bodies are fat globules. The vacuoles should be noted; × 1,000.

cells. Often such vacuoles nearly filled the cells of old cultures. Cells from old colonies were of many sizes and bizarre shapes. Some seemed to be shells containing only a fat globule, while others were elongated, containing one or more vacuoles and several fat globules; still others were cystlike, either clear or granular like chlamydospores, and measuring as much as 15 microns in diameter. Small greenish bodies, difficult to distinguish from fat globules, were found floating free in hanging

drop preparations from old colonies; these were at first thought to be ascospores, but they never were seen to germinate. Tortuous hyphal forms of from one to six segments, some of which were branched, were abundant in the gnarled masses of giant colonies.

In liquid mediums, twenty-four hour cultures consisted of septate hyphae, some of which were branched, together with the round or oval budding forms similar to those on solid mediums. At one end of a segmented hyphal thread the enlarged, round mother cell was

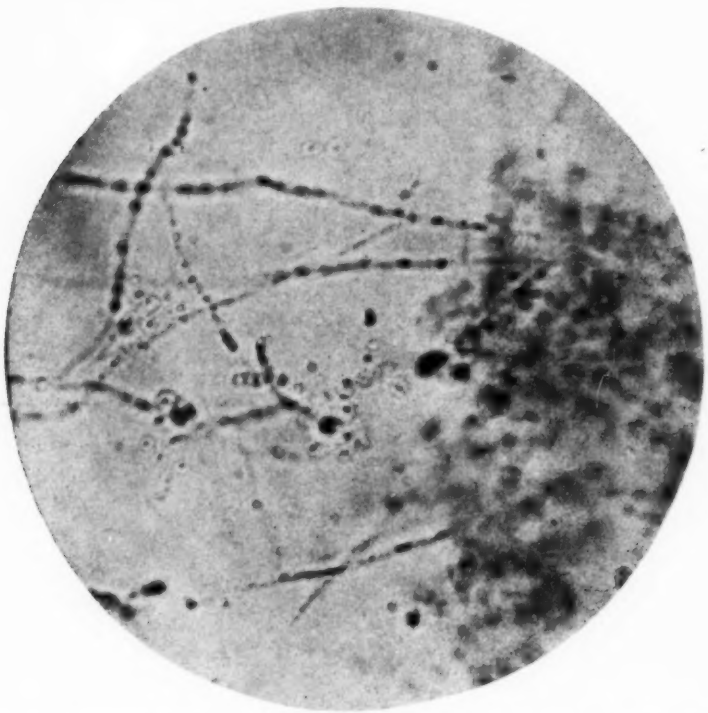

Fig. 2.—Photomicrograph of old hanging drop. The beaded appearance of hyphae due to fat globules should be noted; × 800.

frequently found, sometimes budding and usually containing a vacuole and fat globule, as shown in figure 1. Segments of the hyphae varied from 10 to 60 microns in length and from 2 to 3 microns in diameter, except for the tapering terminal segments which measured as much as 100 microns in length. Side-buds or conidia without sterigmas occurred, occasionally pleurogenous, but usually at the ends of segments; the conidia themselves often bore buds, and these, in turn, others. The end of the conidium-bearing segment was enlarged, like the joint of an insect's leg. Terminal hyphal segments, placed on a hanging drop of solid medium, were seen to become septate, the new terminal segment

elongating and again septating or giving rise to a bud, which either elongated or budded further. Such a preparation rapidly became overgrown by the budding conidia, obscuring the threads. Ascitic fluid was an especially good medium for the development of conidia-bearing hyphae. Hyphae of old hanging drop cultures in sugar broth were given a beaded appearance by numerous fat droplets, shown in figure 2.

In superficial skin lesions, the organism developed both budding forms and hyphae, the latter predominating. In the deeper tissues, such as the lung, liver and kidney of experimental animals, the round cells predominated, and hyphae present were composed of only from two to four short segments. The "double contour" was not a constant feature in stained tissue sections. Figures showing the forms obtained from tissues are to be found in a previous report.[1]

Reproduction was always by gemmation, attempts to develop asci on gypsum blocks, on Gorodkowa's medium and in old cultures having been unsuccessful.

The fungus was gram-positive, but not acid-fast. Young cells took the ordinary stains, but older cells stained poorly, except with aniline gentian violet or carbolfuchsin. A nucleus was not demonstrable by the iron-hematoxylin method. In thin tissue sections, the Gram-Weigert method was fairly efficient in demonstrating the organism.

Dilute suspensions of a twenty-four hour broth culture in extract broth were killed in ten minutes at 54 C.

CULTURAL CHARACTERISTICS

Twenty-four hours at 37 C. or three days at room temperature were usually sufficient for an abundant growth. The appearance on solid mediums varied with the medium, being most abundant on alkaline dextrose agar (*p*H 7.2), and decreasing in the order named: acid dextrose agar (*p*H 6.4), autoclaved carrot, autoclaved pear, autoclaved potato, plain agar, plain gelatin, Löffler's serum medium, blood agar, raw carrot, raw liver and clotted blood. On solid mediums, the surface of the growth was slightly moist, dull white and raised; during the first week, colonies coalesced, becoming light cream colored, later showing a faint tinge of green. The consistency was that of thick top cream. On fruit, the growth was spreading and more moist; on potato it was dry, with the development of minute, chalklike pillars. In liquid mediums, the organism settled to the bottom or adhered to the lower side of leaning tubes. A ring usually developed at the surface, amounting to a collar in fermenting sugar mediums.

In gelatin stabs, hyphae grew out from the line of inoculation. There was no characteristic appearance, such as the pine-tree growth

of *Monilia psilosis* of Ashford,[4] but different tubes of the same strain in the same batch of gelatin exhibited different arrangements of outgrowth. Gelatin was not liquefied.

A loopful of a twenty-four hour broth culture of each strain was inoculated on 75 cc. each of alkaline dextrose agar (4 per cent dextrose, *p*H 7.2) and acid dextrose agar (4 per cent dextrose, *p*H 6.4) in 250 cc.

Fig. 3.—Giant colonies from three months' growth at room temperature; left, acid dextrose agar; right, alkaline dextrose agar.

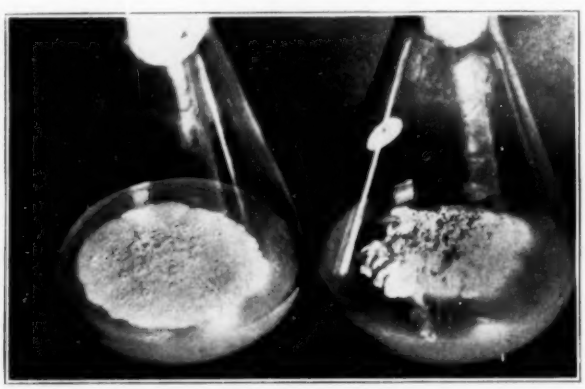

Fig. 4.—Giant colonies from five months' growth at room temperature, during warm weather; left, alkaline dextrose agar; right, acid dextrose agar.

Erlenmeyer flasks, and incubated at room temperature. A smooth, light cream colored plaque developed on the surface, mycelial processes growing into the medium by the third month (fig. 3). During the third month, circular ridges developed on the surface, and the color was

4. Ashford, B. K.: Studies in Moniliasis of the Digestive Tract in Porto Rico, Am. J. M. Sc. **150**:680, 1915; The Etiology of Sprue, ibid. **154**:157, 1917.

tinged with green. Later, bubbles formed and ruptured, causing a gnarled, crumpled-paper-like mass, as in figure 4, especially on those colonies grown during the warm months. The piled-up cells were of both round and thread forms.

Dry aerial hyphae were not developed under any conditions tried, either aerobic or anaerobic, although cultures were kept for as long as one year.

Whether protected from drying or not, most of the cultures were alive at the end of six months, but not at the end of one year. Cells placed on gypsum blocks and kept moist with sterile distilled water lived for two months, but were apparently dead at the end of four months.

FERMENTATION TESTS

The tube-within-a-tube method, with 0.5 per cent solutions of various sugars in extract broth, was found to be satisfactory. Tests were run at both room and incubator temperature. Dextrose, levulose and maltose were fermented, with the production of alcohol, acetic acid and carbon dioxide; galactose was fermented with the production of alcohol and acetic acid but not with carbon dioxide.[5] Fermentation was practically complete in forty-eight hours in the incubator or in one week at room temperature, except in the case of maltose, which required a day longer in the incubator and from two to four days at room temperature. Saccharose, lactose, levo-arabinose, raffinose, mannite, inulin, salicin, xylose, glycerol and dextrin were not fermented. All sugar broths not fermented were made more alkaline than the control. There was no change in the *p*H of dextrin broth. After two or three weeks, the sugar broths which had been fermented became alkaline, with the absorption of carbon dioxide.

Litmus milk was rendered alkaline and clotted within seventy-two hours at 37 C. or within ten days at room temperature.

Neither nitrite nor indole was formed. Calcium oxalate crystals were found in old liquid cultures.

COMMENT

Morphologically and culturally, the organism described in this paper had many characteristics in common with *Monilia psilosis* of Ashford, although the fact that it failed to develop the "inverted fir tree" growth in gelatin definitely differentiates it from the sprue fungus. There are also other reported fungi which it resembles; yet it differs from each

5. One of the strains on gelatin was sent to Dr. B. K. Ashford in Porto Rico. This strain had been shown previously to ferment maltose, but Dr. Ashford reported that it had not fermented maltose in his laboratory.

in some important feature.[6] The morphologic characteristics of the organism and its failure to produce ascospores suggest a close relationship of the fruit canners' fungus to the "parasaccharomyces" of Anderson [7] and to *Moniliae* as listed by Clements,[8] but the present confusion in the taxonomy of "blastomycetes" does not permit of a definite classification.

SUMMARY

1. A new fungus is described. It is considered to be the etiologic agent in an occupational dermatosis among workers in canneries.

2. Morphologically, the fungus occurred both as a round yeastlike form, and as branched, septate hyphae with conidia. Dry, aerial hyphae were not observed.

3. Reproduction was by budding. Asci were not observed.

4. Gelatin was not liquefied. Litmus milk was clotted and rendered alkaline, and dextrose, levulose and maltose were fermented, with the production of alcohol, acetic acid and carbon dioxide. Galactose was fermented, with the production of alcohol and acetic acid only.

5. Although closely resembling *Monilia* or parasaccharomyces, the organism cannot yet be definitely classified.

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6. Engman, M. F.: A Peculiar Fungus Infection of the Skin, Arch. Dermat. & Syph. **1**:370 (April) 1920. Castellani, A.: Medical Mycology, J. Trop. Med. **27**:49 and 61, 1924.

7. Anderson, H. W.: Yeast-Like Fungi of the Human Intestinal Tract, J. Infect. Dis. **21**:341, 1917.

8. Clements, F. E.: The Genera of Fungi, Minneapolis, H. W. Wilson, 1909.

Clinical Notes

ISCHEMIA OF ONE FINGER*

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In the March issue of the ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY, Dr. William Allen Pusey called attention to ischemia of one finger and stated that he had not seen a similar case nor found one in the literature. I believe that these cases are not extremely rare, as I have seen five in a period of ten years, and I think that there are many more patients who never seek the advice of a physician.

I have always classified this condition as an angiospasm of undetermined etiology. Osler mentioned it in association with chronic interstitial nephritis and Raynaud's disease. Butler, in his diagnosis, called it the dead finger (digiti mortui) and gave as a cause exposure to cold. In Tice's System of Medicine, it is described under Raynaud's disease.

This, in my opinion, is where it properly belongs. While Raynaud's disease is called symmetrical gangrene, the early and mild type manifests itself by the cold, numb, bloodless finger or fingers, which may recur year after year without progressing beyond this stage.

Blister formation or gangrene has not occurred in my experience. I have seen the condition involve one finger and several fingers, and one hand and both hands. It occurred in females, with one exception, and invariably during the winter. Frequently, the attacks came on while the patient was driving a car or pushing a baby carriage. It would seem that exposure to cold combined with pressure from tightly clasping the wheel act as precipitating causes.

Therapy consisted of removal of infected teeth, treatment of the anemia and, empirically, of small doses of thyroid. In no case did treatment alter the condition.

* Submitted for publication, April 2, 1929.

Obituary

LOUIS BROCQ, M.D.
1856-1928

In the recent death of Dr. Louis Brocq, dermatology lost one of its most striking and brilliant figures. Originally from the Midi or south of France, Brocq received his medical education in Paris, where he served an internship and came under the influence of Émile Vidal and Ernest Besnier, whom he always regarded as his teachers, being especially fond of Vidal. Brocq's thesis entitled "Étude critique et clinique

Medallion with his portrait presented to Brocq on his retirement.

sur la dermatite exfoliatrice généralisée ou maladie d'Erasmus Wilson" (1882) brought him early recognition. Not long after graduation, he was successful in passing the tests which led to his appointment as physician to the Hospitals of Paris. His teaching career was spent in Hospice de la Rochefoucauld, Hospital Broca, and lastly, Hospital Saint-Louis, where he remained for fifteen years. In 1903, while at Broca, he organized, with his friend Thibierge, the first postgraduate course on skin diseases and syphilis to be given in Paris. Brocq retired from hospital work on Nov. 19, 1921, at which time his friends and pupils presented him with his likeness at a large gathering. He practiced in Paris for five years more, finally retiring to his country home,

La Couronne, near Agen in southern France, about two years ago. A letter from him in July, 1928, told of his poor health. He passed away shortly before Christmas and was buried on Dec. 22, 1928.

Brocq's writings are familiar to all dermatologists. Among them are "La pratique dermatologique," of which he wrote 553 pages; an "Elementary Treatise on Dermatology" (1906); "Dermatological Consultations," written in 1911 with Clément Simon; "A Compend Atlas of Dermatology" (1921) and two series of "Dermatological Clinics," published in 1924 and 1927. In addition, he contributed more than 300 articles on dermatology and syphilography. They covered a large variety of subjects, but among those to be mentioned particularly are: parapsoriasis, the bullous eruptions, the lichenifications, the exfoliative dermatoses, pseudopelade, erythrodermie congénitale ichtyosiforme, scarification in lupus vulgaris, eczema, crude coal tar, pityriasis rosea, angiolupoid, glossite losangique médiane, grattage méthodique, etc. Pautrier, Clément Simon, Civatte and Pierre Fernet are among his best known pupils.

Tall and slender, with flashing black eyes, Brocq possessed a striking personality. Beneath a somewhat stern exterior he had a heart of gold and was most loyal to his friends and pupils. Though in comparatively poor health for years, he did not neglect his service. Having been present at his last visit, I recall his emotion on seeing the last patient, a little boy, whom he kissed with tears in his eyes as he murmured, "And this is the last." His patients received the best care possible. Brocq was an unusual example of high culture, dignity, honesty and devotion to duty. It was a pleasure to see him examine an apparently obscure case, and then in his unerring way make the diagnosis and explain why he made it. As with Vidal and Besnier, the various skin lesions were an open book to him. Brocq was an excellent teacher, and his courses and clinics were always thronged. He believed in tradition, but was not slow in accepting the new when it had proved itself worthy of confidence.

Such a splendid career of unceasing toil directed to the relief of mankind is a beacon light to guide us all.

B. Barker Beeson, M.D., Chicago.

Abstracts from Current Literature

JAUNDICE ASSOCIATED WITH ANTISYPHILITIC THERAPY. L. LORTAT-JACOB and J. ROBERTI, Bull. Soc. franç. de dermat. et syph. **35**:865, 1928.

This report was occasioned by the recent article of Ravaut on the same subject. The authors briefly record twenty-four cases of icterus which they have observed in the past three years. In twenty-two of the cases, syphilis was present. In one, neoarsphenamine was given prophylactically, while the other patient had pemphigus. This experience showed that arsphenamines were not the only antisyphilitic remedy that might provoke jaundice, and that syphilis was not always present when arsphenamine caused jaundice. There was no relation between the dose of arsphenamine and the development of icterus. The status of the Wassermann reaction is not related to the development of jaundice. Prudence counsels withholding the administration of arsphenamines on the appearance of jaundice.

LATENT BILIARY RETENTION IN SYPHILIS. BABALIAN, Bull. Soc. franç. de dermat. et syph. **35**:870, 1928.

The author has noted an increase of urobilin and biliary salts in many cases of syphilis. He investigated this latent biliary retention in various stages of the disease and under diverse conditions. In a moderate and fugacious form, 50 per cent of primary cases show evidence of biliary retention (subicteric jaundice), but in the florid secondary period it is more evident and was present in 90 per cent of syphilitic patients. Its frequency is less in later stages of the disease (from 12 to 50 per cent). Latent biliary retention is a consequence of hepatitis with hyperfunction of the organ when present in the early stage, while in later stages it is probably the result of a cirrhotic change. Studies of the author on this question lead him to see in latent biliary retention a condition resulting from several factors: therapeutic shock, hepatic Herxheimer reaction and a special toxic action on the erythrocytes.

JAUNDICE ASSOCIATED WITH ANTISYPHILITIC TREATMENT. MILIAN, LATHE and DELARUE, Bull. Soc. franç. de dermat. et syph. **35**:873, 1928.

This communication is also occasioned by the recent article of Ravaut on this subject. Milian and his collaborators first recall the historical aspects of the question (only the French literature is mentioned) and show the varied opinions that have existed on this subject.

Since the war, in Milian's service, 119 cases of icterus have been seen. In fourteen, antisyphilitic medication was not given. Ten of the cases were associated with a roseola and neoarsphenamine administered with rapid disappearance of the jaundice. None showed any toxic phenomena.

There were five deaths in the whole series of cases; only one might reasonably have been attributed to arsenical therapy. Sixty-four cases appeared during the secondary stage, thirty-eight during the tertiary stage and three in heredosyphilitic patients.

The relative proportion of cases of icterus appearing during treatment was as great, if not greater, with mercury and bismuth, as with arsphenamine. Cases of post-therapeutic icterus appeared most frequently from thirty to sixty days after the cessation of treatment, thus suggesting recurrence rather than medicinal intoxication. Of the 105 cases of jaundice in which antisyphilitic treatment had been given, 79 were attributed to syphilis; the others to toxic or infectious agents. As to treatment when icterus occurred, Milian has always continued arsphenamine medication in those cases in which syphilis was present. Sixty of the patients

showed a perfect toleration of the medication; of the remainder, treatment was discontinued for extraneous causes, except in four, in whom definite therapeutic contraindications intervened.

Milian thinks that these figures show definitely the syphilitic pathogenesis of the icterus. This is the opinion which he has always championed. His experience refutes the criticism that the jaundice may have disappeared in spite of the treatment. He thinks that there is a definite distinction between icterus occurring "inter-therapeutically" and that developing post-therapeutically. The latter are comparable to neurorecurrences, but the former are of much more difficult interpretation. They are probably instances of arsenic resistant organisms. Perhaps a change of antisyphilitic remedies is advisable, but certainly not a renunciation of treatment.

THE PATHOGENESIS AND TREATMENT OF "PARAARSENICAL" ICTERUS. A. SEZARY, Bull. Soc. franç. de dermat. et syph. **35**:883, 1928.

Since 1921, Sezary has seen 24 cases of icterus in 1,600 syphilitic patients. He thinks that the only way to solve the much discussed question of jaundice occurring during antisyphilitic treatment is by detailed observation and records of these cases. On the occurrence of icterus in his patients, he has always stopped arsenical and other antisyphilitic treatment. There has always been a rapid and complete cure of the complication. His program now depends on circumstances; if active syphilis is present, mercury and bismuth are substituted for arsphenamine; if there is no syphilitic activity, all antisyphilitic treatment is stopped until jaundice has disappeared; then treatment is resumed with mercury and bismuth followed by the cautious administration of an arsenical preparation.

UNUSUAL COURSE OF LUPUS VULGARIS OF THE NOSE AND BUCCAL CAVITY. L. CHROMPRET and M. DECHAUME, Bull. Soc. franç. de dermat. et syph. **35**:893, 1928.

The patient dated his complaint from a trauma of the nose which was followed by persistent crust formation and occasional bleeding. These symptoms were temporarily arrested by a rather prolonged course of roentgen treatments. Some years later, the upper teeth became loose and were extracted. When seen by the presenter there was cicatricial deformity of the nose with some tuberculous activity as well as loss of most of the upper and lower teeth and resorption of the alveolar margin. Microscopic examination showed tuberculous activity. The question arose whether the entire picture was the effect of tuberculosis or partly, at least, due to chronic radiodermatitis.

A CASE OF ACTINOMYCOSIS, PREVIOUSLY RESISTANT TO TREATMENT, CURED AFTER DESTRUCTION OF ENCYSTED AREAS. P. RAVAUT and L. FILLIOL, Bull. Soc. franç. de dermat. et syph. **35**:896, 1928.

The case was one of actinomycosis of the cheek which had resisted iodides and radiotherapy. This is not unusual and the authors attribute this therapeutic resistance to the development of cystic areas containing the micro-organisms; these areas being surrounded by a fibrosis that prevents the therapeutic action of drugs, etc. In this case they employed diathermy to open up these encysted points and followed it with intensive iodide therapy and effected a cure.

THE COMBINATION OF ARSENIC RESISTANCE AND WASSERMANN NEGATIVITY IN EARLY SYPHILIS. LORTAT-JACOB and SOLENTE, Bull. Soc. franç. de dermat. et syph. **35**:899, 1928.

Three cases are reported in which treatment with neoarsphenamine was instituted during the primary stage; nevertheless, secondary lesions developed, though the Wassermann reaction gave a negative result. However, there was a prompt beneficial effect from the administration of bismuth.

LUPUS ERYTHEMATOSUS DISSEMINATUS. GOUGEROT, BARTHELEMY and LOTTE, Bull. Soc. franç. de dermat. et syph. **35**:906, 1928.

A case of the very rare exanthematic form of the disease is described. There was no fixed form preceding dissemination. The exanthem was of the generalized roseolar type. The patient had acute pulmonary tuberculosis and rapidly succumbed.

SYPHILITIC JUXTA-ARTICULAR NODULE. GOUGEROT, BURNIER and MLLE. ELIASCHEFF, Bull. Soc. franç. de dermat. et syph. **35**:907, 1928.

The patient had a primary lesion in 1897, active tertiary manifestations in 1900, and since then some modern antisyphilitic medication has been given. A juxta-articular nodule appeared in 1928 over the left olecranon process.

SCLERODERMA AND PIGMENTATION. GOUGEROT, L. PERIN and FILLIOL, Bull. Soc. franç. de dermat. et syph. **35**:907, 1928.

A brief report is given of a case of vitiligo and scleroderma. In the vitiliginous areas (invaded to some extent by scleroderma) punctiform return of pigment had occurred.

"ESSENTIAL" HYPERKERATOSIS PALMARIS CURED BY BACTERIOPHAGE. GOUGEROT and E. PEYRE, Bull. Soc. franç. de dermat. et syph. **35**:908, 1928.

A case of this disorder is briefly described in which the application of a stock staphylococcus bacteriophage occasioned a rapid cure.

BULLOUS URTICARIA PIGMENTOSA WITH LICHENOID LESIONS. GOUGEROT and LOTTE, Bull. Soc. franç. de dermat. et syph. **35**:909, 1928.

An infant, aged 5 months, had disseminated lesions of the macular type; some were surmounted by bullae. In addition, the soles and palms showed numerous minute, polygonal papules recalling those of lichen planus.

PARAPSORIASIS NIGRICANS. P. BLUM and J. BRALEZ, Bull. Soc. franç. de dermat. et syph. **35**:910, 1928.

The eruption consisted of small macules and papules; some were dark gray and others bright red. They were disseminated in large numbers. Histologic study favored parapsoriasis.

LUPUS ERYTHEMATOSUS CURED BY ANTISYPHILITIC REMEDIES. HUDELO and RABUT, Bull. Soc. franç. de dermat. et syph. **35**:914, 1928.

The case was one of the erytheme centrifuge type. The disease disappeared after the employment of geodyl, but recurred. A positive Wassermann reaction was found, and the patient was given an arsphenamine compound with the result that the lupus erythematosus disappeared.

DELAYED ULCERATIVE RADIODERMATITIS AT THE SITE OF INJECTIONS OF MESOTHORIUM BROMIDE. H. JAUSION and A. PECKER, Bull. Soc. franç. de dermat. et syph. **35**:915, 1928.

The patient had been given six subcutaneous injections of mesothorium in 1922. At a recent examination he was found to have a typical chronic radiodermatitis with indolent ulcers. Electroscopic study showed that the amount of mesothorium still present in the affected tissue was less than 0.2 micrograms. In view of this case, it is advisable to be cautious in the use of radioactive substances where depots are formed.

TREATMENT OF VITILIGO BY A COMBINATION OF ULTRAVIOLET LIGHT AND ESSENTIAL OILS. LOUSTE and JUSTER, Bull. Soc. franç. de dermat. et syph. **35**:920, 1928.

For some time, the authors have treated patients with early cases of vitiligo by rubbing essential oils in the affected parts and then exposing the areas to ultraviolet light. They have used oil of bergamot almost exclusively. Considerable improvement was obtained in cases of recent development.

RESULTS OF RADIOTHERAPY OF THE SYMPATHETIC SYSTEM IN SUPRAMALLEOLAR ERYTHROCYANOSIS, ACRO-ASPHYXIA, RAYNAUD'S DISEASE AND CRURAL ULCERS. J. GOUIN and A. VIENVENUE, Bull. Soc. franç. de dermat. et syph. **35**:924, 1928.

The authors originated the method of spinal irradiation for lichen planus and applied it to the foregoing conditions. They have noted an influence on the number of circulating leukocytes when the roentgen rays are applied to the large vascular areas (Scarpa's triangle, axillae), over the vertebral column, and to a cutaneous surface. The hematologic change is similar to that noted after periarterial sympathectomy; hence the authors think that their method influences sympathetic function. In the diseases mentioned, they gave filtered regional (over the vascular trunks) and vertebral radiation.

Their results were good, comparable to those obtained with periarterial sympathectomy. Two patients with Raynaud's disease were cured and atonic ulcers of the legs showed rapid cicatrization. Each of the twenty-two patients with supramalleolar erythrocyanosis reported in this paper showed decided amelioration or cure.

TREATMENT OF ACNE KELOID BY SURGICAL DIATHERMY. P. RAVAUT and L. FILLIOL, Bull. Soc. franç. de dermat. et syph. **35**:942, 1928.

The authors call attention to the superiority of this method over those usually employed. They pass a fine needle to the depth of the lesion and coagulate it.

ULCERS OF THE LEG IN SPLENOMEGALY. A. NANTA, Bull. Soc. franç. de dermat. et syph. **35**:946, 1928.

In Algiers there is a type of splenomegaly peculiar to that region. It has certain features in common with the sickle cell anemia of the United States. In the Algerian disease indolent leg ulcers are common. They disappear after splenectomy. The author found splenic aspergillosis in this disorder.

TWO CASES OF IMMUNITY TO SYPHILIS. LEGRAIN and SCHULMANN, Bull. Soc. franç. de dermat. et syph. **35**:950, 1928.

The authors report instances of failure to acquire the disease despite repeated sexual contact with infected partners. Those apparently immune did not have congenital syphilis.

CASE OF PUSTULAR FAVUS DUE TO ACHORION SCHOENLEINII. G. HUFSCHMITT, Bull. Soc. franç. de dermat. et syph. **35**:957, 1928.

The patient was a child, aged 9 years, who presented a suppurating, cicatricial patch of the scalp. Cultures showed *Achorion schoenleinii.* To the author's knowledge, the type of lesion in this case (Kerion) has not been recorded in favus.

CHLOASMA IN A MAN, FOLLOWING TRAUMA OF THE LUMBAR REGION. LANZENBERG and ALFANDARY, Bull. Soc. franç. de dermat. et syph. **35**:960, 1928.

The patient had a fall resulting in paralysis of the legs, urinary retention and incontinence of the sphincter ani. Radiography showed a "luxation" of the second lumbar vertebra. According to the patient's statement, pigmentation of the face

appeared soon after the accident and when seen by the presenter resembled the so-called "mask of pregnancy."

CASE OF POIKILODERMA VASCULARIS ATROPHICANS. C. ADRIAN, Bull. Soc. franç. de dermat. et syph. **35**:964, 1928.

The patient presented an extensive eruption, consisting of irregular erythematous patches, which on close inspection showed telangiectasia and atrophy. A peculiar feature of the case was the response of the skin to friction. This caused an immediate mottled erythema.

MULTIPLE SARCOMA WITH LYMPHATIC INVASION. L. M. PAUTRIER, Bull. Soc. franç. de dermat. et syph. **35**:967, 1928.

A description is given of a case that was previously reported, in which there was a rapid response to radiotherapy. The prognosis was clouded by some evidence of pulmonary invasion.

ANETODERMA OF JADASSOHN. L. M. PAUTRIER and E. WALTER, Bull. Soc. franç. de dermat. et syph. **35**:970, 1928.

Pautrier has often noted the coexistence of acrodermatitis chronica atrophicans and anetoderma (Jadassohn). Usually lesions of the former disease have predominated; in the present case, anetoderma was more prominent.

PREMYCOTIC ERYTHRODERMA OF ANGIOMATOUS TYPE. L. M. PAUTRIER and R. CAMUS, Bull. Soc. franç. de dermat. et syph. **35**:975, 1928.

Clinically, the condition conformed to the diagnosis. Histologically, in addition to the polymorphous infiltrate and other commonly recognized features, there was a striking increase in the blood vessels in all regions of the derma.

BULLOUS TYPE OF INFECTIOUS PURPURA. WOLFF and BRUSSET, Bull. Soc. franç. de dermat. et syph. **35**:977, 1928.

In a child, aged 14, there developed arthralgia and fever, accompanied by large ecchymoses and purpura. On the purpuric lesions, bullae developed. Their contents, first serous, rapidly became hemorrhagic. At the height of the process the cutaneous aspect recalled that of pemphigus with hemorrhagic bullae.

Transfusions and intravenous dextrose solutions were followed by a cessation of the attack.

HYPERTROPHIC HEMANGIECTASIA OF PARKES-WEBER. L. M. PAUTRIER and A. ULLMO, Bull. Soc. franç. de dermat. et syph. **35**:981, 1928.

The authors give a detailed description of a case of this disorder. It is a form of hemangioma limited to an extremity and associated with hypertrophy of the affected part. In the present case, the lesions began in the tenth year on the right foot and gradually increased in extent. They consisted of brownish patches with irregular surfaces. This surface irregularity suggested underlying varicosities. Histologic examination showed large vessels immediately under the epidermis with vascular glomeruli in the lower cutis.

MICHAEL, Houston, Texas.

CHANGE IN THE RABBIT'S EAR DUE TO REPEATED APPLICATION OF VOLATILE COMPONENTS OF COAL-TAR PITCH. S. SHIBATA, Acta Dermat. **12**:386 (Oct.) 1928.

For the experimental studies, the volatile portion obtained by steam distillation of the coal pitch was used; which was again divided into three components, namely, basic, acidic and neutral.

These components were applied to the inner surface of rabbit's ears every day, in various combinations, for comparative study (tarring three, eight, fifteen times), and the following results have been obtained:

1. The acidic volatile component acts most powerfully on the skin of the inner surface of rabbit's ears, causing an acute and severe dermatitis after the second or third application.

Histologic study shows that the epidermis is completely destroyed by this component, and the connective tissue becomes edematous, accompanied by inflammatory cells.

2. The neutral volatile component also produces at the first application acute dermatitis, resulting in bullous change; and the squamous and alopecic change and thickening become marked at the end of its repeated application.

Histologic study shows that there are hyperkeratosis and remarkable hypertrophy of the epithelial cells, with inflammatory cell infiltration in the connective tissue part.

3. The change due to the basic volatile component is hyperemia accompanied by slight edematous swelling. Histologically, there is remarkable dilatation of the blood vessels, no intense atypical hypertrophy of the epithelial cells, however, being produced.

From this experiment, it is obvious that the acidic component acts destructively to the skin, that the neutral component contains the epithelial growth-producing factor in high concentration, while the basic produces neither destructive nor atypical vegetation of the epithelial layers.

EPIDIDYMITIS SYPHILITICA. S. YOSHIDA, Acta Dermat. **12**:429 (Oct.) 1928.

The author reports two new cases of this rare condition. In the first patient, aged 22, the left epididymis was swollen to the size of a pigeon's egg and was hard for a period of five weeks. There was also an ulcer on the left scrotum. Pain was entirely absent. Histologic examination showed granuloma of lymphocytes, plasma cells, fibroblasts and giant cells. Complete disappearance resulted following antisyphilitic treatment. The second case was similar in every respect.

McCARTHY, Washington, D. C.

CONTRIBUTION TO OUR KNOWLEDGE OF TRICHOEPITHELIOMA. A. FUJIWARA, Japan J. Dermat. & Urol. **27**:1 (Oct.) 1927.

The author reports the case of a tumor the size of a hazelnut in which the condition was diagnosed clinically as atheroma. When sectioned, numerous epithelial strands derived from the wall of an atheroma and arranged in a reticular fashion were seen. Many horny cysts were present in these strands and by following these cysts through serial section, he was able to demonstrate that the horn in these cysts was gradually transformed into a colloid-like material. The sweat and sebaceous glands and the arrector pili muscles were entirely absent from the skin in this region.

INOCULATION OF DIFFERENT TYPES OF TRICHOPHYTONS IN THE TESTICLES OF RABBITS. I. EHARA, Japan J. Dermat. & Urol. **27**:13 (Sept.) 1927.

The author injected 0.5 cc. of an emulsion (1:10 in distilled water) of several different trichophytons. The scrotal sac became edematous in twenty-four hours, and the parenchyma was indurated. The swelling and induration subsided in twenty-four hours. Histologically, marked necrosis was found at the site of injection. In the cases of trichophyton of animal origin, mycelia could be demonstrated from the third to the twelfth day after inoculation. In injection with the human types, mycelia could be found as early as the second day, but they had entirely disappeared at the sixth to the eighth day. Ehara recommends this as a means to differentiate between animal and human types.

HEMATOPORPHYRIA CONGENITA. K. MATSUOKA, Japan J. Dermat. & Urol. **28**: 1 (June) 1928.

The author gives a report on three new cases of hematoporphyria congenita making a total of nineteen in the literature. In his cases early in life there appeared on the face and on the dorsum of the hands and feet a vesicular eruption with serous content. The eruption healed with drying up of the crusts and was followed by atrophy, superficial scarring and hyperpigmentation. The spleen was palpable in two cases in which the urine was the color of port wine. The red cell content and the hemoglobin content were 20 per cent below normal in these two cases. The third case showed only the skin eruption. When the patients were kept indoors and protected from the sunlight, the eruption disappeared.

The author concludes that these patients are sensitive to something in the sun's rays which causes a gradual hemolysis which in turn results in an enlargement of the spleen. Extensive spectral investigations were carried out with the urine containing porphyrin.

DERMATOLOGIC ABSTRACTS

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

RELATIONS OF SYPHILIS AND DIABETES TO ONE ANOTHER. I. I. LEMANN, Am. J. Syph. **13**:70 (Jan.) 1929.

Lemann contends that there is good clinical and postmortem evidence to show that diabetes is in some cases produced by syphilitic disease of the pancreas. These cases, however, are rare. There is no sound evidence to support the contention that syphilis plays an important rôle in the etiology of diabetes mellitus. Diabetes is not a parasyphilitic disease. A syphilitic person who becomes diabetic may become so because of his syphilis or independently of it. In the former instance the prognosis with regard to the diabetes may be better than in the nonsyphilitic person. In the latter instance the patient carries truly a double burden. In either case the diabetes may affect the syphilitic processes unfavorably, causing unusual ulcerations. In a diabetic person who becomes syphilitic, the syphilis aggravates the diabetes, as do all other infections, and the diabetes affects the syphilis unfavorably. A diabetic patient, because of a coexisting syphilis, might be more prone to have arterial disease and hence more prone to gangrene.

CONGENITAL SYPHILIS IN CHILDREN: TREATMENT BY INTRAPERITONEAL INJECTIONS OF NEOARSPHENAMINE AND MERCUROSAL. J. YAMPOLSKY, Am. J. Syph. **13**:121 (Jan.) 1929.

In seventeen cases of congenital syphilis covering a period of more than four years, Yampolsky gave from sixteen to thirty-two intraperitoneal treatments and in one case eight. Only four of these cases presented a positive Wassermann reaction after treatment, but no cases presented any signs of congenital syphilis. Both neoarsphenamine and mercurosal were given intraperitoneally; no deaths, peritonitis or adhesions resulted. There was no bad effect on human beings. Absorption is rapid from the peritoneal cavity.

COMPARISON OF WASSERMANN AND PRECIPITATION REACTIONS IN PREGNANCY. S. S. JONES, Northwest Med. **27**:526 (Nov.) 1928.

In 400 Wassermann and Hinton reactions reported on by Jones, there were 384 agreeing as negative, and 7 agreeing as positive. There were three in which the Wassermann reaction was negative and the Hinton positive; one was in a case of syphilis in which the patient was not treated, another was considered positive from the history and physical signs and the third was in a patient who gave no history or symptoms of syphilis. There were six specimens that gave a weakly

positive Wassermann and a negative Hinton reaction. All of these were considered negative. This gives twelve positive reactions in 500 cases, or an incidence of 2.4 per cent, approximately what other investigators have found in prenatal clinics in which the large majority of patients are white women. Jones considers a routine blood Wassermann test on prenatal patients of definite value in the diagnosis of syphilis. If this is checked by a precipitation reaction, the value is increased. The best precipitation reaction for this purpose in his estimation is the Hinton test.

RADIATION EFFECTS ON SYSTEMIC ALEUKEMIC LYMPHOMATOSIS. B. F. SCHREINER, Radiology **12**:127 (Feb.) 1929.

Two of the four cases reported on by Schreiner showed hematologic pictures of aleukemic leukemia and subsequently chronic leukemic blood symptoms. Roentgen irradiation in sufficient quantity, i. e., from 30 to 65 per cent of the skin erythema dose, caused a disappearance of the enlarged tumor masses or nodes, but the cases in which radiation was employed must be controlled by blood counts, as a disastrous leukopenia must be anticipated.

TREATMENT OF CONGENITAL SYPHILIS. J. YAMPOLSKY, South. M. J. **22**:189 (Feb.) 1929.

Yampolsky's method of treatment consists exclusively of intraperitoneal injections of neoarsphenamine and mercurosal. The dose is as follows: neoarsphenamine, 0.1 Gm. in 2 cc. of a physiologic solution of sodium chloride for every 15 pounds (7 Kg.) of body weight of the patient. The mercurosal is given as it comes, in solution, and the dose is ½ grain (0.032 Gm.) for every 30 pounds (13.6 Kg.) of body weight of the patient. A course of treatment consists of sixteen weekly injections, the neoarsphenamine and mercurosal being given alternately every week. Thirty days of rest are then allowed, and a Wassermann test is made. If the test is negative, sixty days are allowed to elapse before the next treatment is given. If the test is positive, sixteen more injections are given at once. Two courses of treatment are required during the first year of life.

TANNIC ACID TREATMENT OF BURNS IN CHILDREN. A. H. MONTGOMERY, Surg. Gynec. Obst. **48**:277 (Feb.) 1929.

Montgomery uses a 5 per cent aqueous solution of tannic acid in the treatment of burns instead of the 2.5 per cent solution advocated by Davison. He says that it produces a coagulum more rapidly and does not seem to affect the uninjured tissue.

BIOCHEMICAL INVESTIGATIONS IN ALLERGIC CONDITIONS. H. W. BARBER and G. H. ORIEL, Brit. M. J. **2**:880 (Nov. 17) 1928.

Investigations into the metabolism of allergic conditions were made by Barber and Oriel. Certain phenomena have been demonstrated to occur with remarkable constancy in various manifestations of the allergic stage; some of these have already been described in experimental anaphylaxis and in serum sickness, which is generally admitted to be truly anaphylactic in origin. In the allergic state, whether it is intermittent, as in certain cases of urticaria, angioneurotic edema and asthma, or whether it is more or less chronic, with periodic exacerbations or remissions, as in Besnier's prurigo and infantile eczema, there can be recognized a definite cycle of events corresponding to the preparoxysmal stage, the actual paroxysm and the postparoxysmal stage. In this cycle the most striking features are: *(a)* the rise in the amino-acid content of the blood; *(d)* the rise in the excretion of ammonia out of all proportion to the excretion of acid in the urine; *(c)* the lowering of the corpuscle content of chloride, and the retention of chloride during the paroxysm with its subsequent excretion, as in pneumonia and other acute infection; *(d)* the deposition of urates in the preparoxysmal or paroxysmal stage; *(e)* the reaction of ether during the periods of active manifestations, and *(f)* the diuresis with decreasing acidity

and sometimes marked alkalinity of the urine in the postparoxysmal stage. The deposition of urates and the ether reaction in the urine indicate an alteration in its colloid state, comparable probably to the colloidal change that is held to occur in the blood during anaphylactic shock. It is probable that the increased excretion of ammonia and the retention of chlorides are protective mechanisms.

HEMOGLOBINURIA AND URTICARIA ARISING FROM COLD: PRESENCE OF DERMOLYSIN. K. E. HARRIS, T. LEWIS and J. M. VAUGHAN, Brit. M. J. **2**:885 (Nov. 17) 1928.

Harris and others report three cases. The first patient was suffering from paroxysmal hemoglobinuria and urticaria, the second from simple cold urticaria and the third from uncomplicated paroxysmal hemoglobinuria, each representing a response to exposure to cold. The hemoglobinuria in the first and third types was due to a hemolysin, the urticaria of the second and third types to a dermolysin. These two substances are frequently associated. There is a general resemblance of the corresponding reactions, and the two substances are closely allied pathogenetically.

MICROSCOPE SLIDE PRECIPITATION TEST FOR SYPHILIS. T. HAMILTON, M. J. AUSTRALIA **2**:621 (Nov. 17) 1928.

Hamilton regards the Kline test as a simple, speedy and reliable method of diagnosis in cases of suspected syphilis. Of its specificity there seems little doubt; and the fact that known syphilitic patients, whose condition has been diagnosed clinically and according to the Wassermann test after a course of treatment, continue to react to the Kline test seems to indicate that failure to react to the Kline test is a more delicate criterion of freedom from syphilis than failure to react to the Wassermann test. Among 246 cases, the Kline and Wassermann test were in agreement in 238 cases, in relative agreement in two cases and in disagreement in six cases.

DIATHERMIC TREATMENT OF ULCERATIVE ROENTGEN AND RADIUM DERMATITIS. H. BORDIER, Paris Med. **2**:402 (Nov. 10) 1928.

Bordier considers only cases of ulcerative roentgen and radium dermatitis in patients treated with roentgen rays or radium, excluding physicians, roentgenologists and persons who apply radium. Diathermy has proved to be the only remedy having the power of modifying atonic wounds which do not have a tendency to heal spontaneously. The use of ultraviolet rays in the treatment of the kinds of dermatitis mentioned seems absolutely contraindicated and even dangerous. This statement is based on the following fact: A patient, whose case is described in detail, had been treated, seventeen years before, with radium for a tumor of his left parotid gland on which an operation had been performed; after a too long exposure to the sun, causing a slight insolation, the region of his cheek which had been irradiated formerly developed an ulceration. In this case the ultraviolet rays of the sun must be considered to have been the cause of the radium dermatitis. The reason for the dangerous action of ultraviolet rays in cases of ulcerative roentgen and radium dermatitis is simple: by treating with ultraviolet rays, the wave length of which is very short, a lesion produced by roentgen rays or radium, the wave lengths of which are still shorter, an actinodermatis is added to the initial roentgen or radium dermatitis. The author reports two cases of ulcerative roentgen dermatitis and one case of ulcerative radium dermatitis; in all three cases, the lesions disappeared after from two to three months of diathermic treatment.

AN EPIDEMIC OF "FIFTH DISEASE" OBSERVED IN PERUGIO. A. BOCCHINI, Pediatria **36**:731 (July 15) 1928.

Bocchini admits that erythema infectiosum, or "fifth disease," is rare but declares that it is not as rare as is supposed, since it is often not recognized. During the period from January to April, 1928, the author saw a number of cases of the

disease. The patients were mostly children. At first, the type of exanthem caused much perplexity as to the differential diagnosis; measles or rubella was suspected. After a few days, a diagnosis of erythema infectiosum, or fifth disease, was made. The disease begins suddenly with a more or less intense reddening of the face, which is warm to the touch. On close examination, a maculopapular efflorescence is observed. Some times the exanthem takes on something of the appearance of erysipelas. It spreads to the limbs, the trunk and sometimes to the abdomen. After from two to three days, sometimes sooner, it begins to retrogress. Desquamation does not occur. The prodromal signs of measles are absent in erythema infectiosum. In rubella, the redness of the face may bear some resemblance to erythema infectiosum, but the redness is not as transient as in fifth disease, in which the exanthematous localizations are very characteristic. Rubella, furthermore, is often associated with other symptoms, such as enlargement of the lymph glands. Confusion with scarlet fever is not possible. Measles, rubella and scarlet fever do not establish immunity against fifth disease. The prognosis is good. All the patients observed recovered in from five to fifteen days. No special treatment is indicated.

Icterus Following Administration of Neoarsphenamine to a Nonsyphilitic Patient. M. Roch and A. Du Bois, Rev. méd. de la Suisse Rom. **48**:975 (Nov. 10) 1928.

As evidence of the nonsyphilitic icterus that occurs not infrequently during the treatment of syphilitic patients with neoarsphenamine, Roch and Du Bois report a case of icterus that they observed in a nonsyphilitic woman treated with neoarsphenamine for apruriginous eczema. A very pronounced icterus with acholic stools, bradycardia and pruritus appeared ninety days after the last injection of neoarsphenamine and persisted for a long time in spite of appropriate treatment.

Reactional Cutaneous Phenomena Following Application of Mercurochrome. A. Malléu, Arch. de med., cir. y espec. **30**:36 (Jan. 12) 1929.

Malléu says that the skin of patients treated with mercurochrome reacts in two ways: by the production of a more or less intense pink coloration of the skin or by a rash. Fifty-five and 45 per cent of the mercurochrome is eliminated normally in the urine and feces. In forty-five cases treated, the author observed discoloration of the skin in only four, or 8.87 per cent. The patient who showed the most intense discoloration of the skin had puerperal septicemia and died. In patients in whom a rash developed, it always resembled measles exanthem, and in one case there was a buccal exanthem. The color of the elements, however, is darker; their appearance, in some places, is like that of scarlet fever. The rash was never accompanied by itching. When the drug was discontinued, the rash did not appear again. It never lasted more than three days. The appearance of mercurochrome exanthem coincides with the urinary changes. The author says that at the present time definite conclusions cannot be drawn.

Hemolytic Rapid Reaction in Syphilis. H. Gross, Klin. Wchnschr. **7**:2106 (Oct. 28) 1928.

Results with Kadisch's hemolytic rapid reaction and with the Wassermann reaction were compared by Gross in 500 serums. They agreed in all except thirty-four. In twenty of these the Kadisch reaction was negative while the Wassermann reaction was positive. These serums were all from patients with latent or treated syphilis. In fourteen serums the Wassermann reaction was negative and the Kadisch reaction positive. In three of the cases represented in this group, grounds for suspecting syphilis were absent, two were of primary syphilis and the remaining nine were of latent or treated syphilis.

HYPOGLYCEMIA IN ADDISON'S DISEASE. W. WADI, Klin. Wchnschr. **7**:2107 (Oct. 28) 1928.

In a typical case of Addison's disease with destruction in the entire suprarenal system, a pronounced hypoglycemia accompanied the severe comatose attacks. The latter could be aborted by prompt administration of dextrose, from which fact Wadi concludes that the comatose attacks were hypoglycemic reactions. The entire carbohydrate metabolism was apparently disturbed. Sensitiveness to epinephrine was greatly decreased; 0.2 Gm. of epinephrine (ten times the usual dose) raised the blood pressure only 15 mm. of mercury in two minutes. It lowered the blood sugar. It appears that in Addison's disease the oxidation of sugar is accelerated, also that there is an impoverishment as regards glycogen. The phenomena known as cortical symptoms also agree in many points with the hypoglycemic reactions.

HEREDITARY SYPHILIS. R. MATZENAUER, Wien. klin. Wchnschr. **42**:2 (Jan. 3) 1929.

Matzenauer asserts that the existence of hereditary syphilis in the strictest sense cannot be proved. He says that there is no direct transference of the disease from the father to the offspring through the germ cell. A child born with syphilis has always contracted the disease from the mother. One should therefore speak of congenital rather than of hereditary syphilis. The Wassermann reaction of mothers with syphilitic offspring is in nearly all cases positive, even if there are no other manifestations of the disease. According to the author, *Spirochaeta pallida* is found in greater number in the fetus than in the mother, because the fetus is a better medium for its development. As a practical conclusion, Matzenauer suggests that mothers of syphilitic children, even if they appear to be healthy, should receive antisyphilitic treatment.

INFLUENCE OF BAROMETRIC PRESSURE, TEMPERATURE AND AIR HUMIDITY ON ERYSIPELAS. S. A. NEKRASSOV, KLINICHESKY J. SARATOV, Universiteta, Saratov. **5**:543 (May) 1928.

Data collected over a period of five years form the basis of Nekrassov's observations on the relation of meteorological changes to erysipelas. He found that the frequency of the disease corresponds with the increase of humidity in the air.

TREATMENT OF ANTHRAX. P. J. KAMINER, Irkutsky Neditsinsky Jurnal, Irkutsk **6**:45 (Oct.) 1928.

Kaminer emphasizes the good results of conservative local treatment in all forms of anthrax, especially in purely local skin anthrax, without pronounced constitutional symptoms. Eight cases of local skin anthrax were cured by him with borated petrolatum dressings, rest and diet.

Society Transactions

CUBA DERMATOLOGICAL ASSOCIATION

J. J. MESTRE, M.D., *Secretary*

Monthly Meeting, Nov. 8, 1928

LICHEN PLANUS. Presented by DR. L. GARZON.

A colored woman, aged 31, presented a typical eruption of profuse lichen planus for six months previous to presentation. Lesions were also present in the mucous membrane of the mouth. She had been treated with intramuscular injections of acetylamino-oxyphenylarsinate of diethylamino-ethanol. Three cubic centimeters of this arsenical compound was injected twice a week into the gluteal muscles. Rapid improvement was noted after three injections.

DISCUSSION

DR. FERRER: I wish to call attention again to the pigmentation observed in patients with lichen planus treated with arsenical preparations. Arsenic exaggerates the natural tendency to pigmentation observed after the lesions of lichen planus heal.

DR. GARZON: This compound has been used largely in France in the treatment for lichen planus. In connection with the pigmentation, I wish to remind the members that colored skin often appears deeply pigmented after the disappearance of any inflammatory disease, even when arsenic is not used.

LICHEN SCROFULOSORUM FOLLICULARIS ET CORNEUS. Presented by DR. GONZALES.

A colored woman, aged 38, said that a month previous to presentation she had suffered from heat waves and pruritus. An eruption then appeared first on the nape of the neck and the ears, rapidly spreading to the chest, back, arms and legs. The lesions were dry, harsh, corneous papules situated on the follicular orifices and were grouped in patches several inches in diameter, separated by normal skin. Some of the papules were acuminated with projecting corneous filaments. In some locations the lesions presented a seborrheic appearance. Clinical and radiologic examinations of the lungs showed tuberculous infiltration of the apexes. The Pirquet test was strongly positive. The blood count showed slight anemia. There were enlarged glands in the neck.

DISCUSSION

DR. PARDO-CASTELLO: I agree with the diagnosis. Some of the papular groups are typical of lichen scrofulosorum. Others, were they alone, I should consider as lesions of lichen spinulosus. This case seems to favor the growing tendency to ascribe a tuberculous origin to lichen spinulosus and to keratosis pilaris.

ACQUIRED ACTINODERMATITIS. Presented by DR. SAENZ.

A white man, a Cuban, a peddler of vegetables, presented discolored irregular patches on the face, neck and hands which were reddened by prolonged exposure to the sun in the course of his business. Biopsy had been performed but the report had not been received. The results of a chemical test for hematoporphyrin in the urine were to be reported.

DISCUSSION

DR. FERRER: I think the sensitization of the skin of this patient to the sun rays is secondary to the depigmentation observed. There are achromic patches entirely devoid of pigment, which naturally lack the normal defense of the pig-

mented skin against the short wave rays of the spectrum. We have found in our hospital service that patches of vitiligo react in this way when exposed to the sun.

DR. PARDO-CASTELLO: I agree with Dr. Ferrer's remarks. I think this is a case of vitiligo and erythema solare. There are typical lesions of vitiligo on the genitals of this patient, which show no erythema.

DR. SAENZ: I think that the case is one of actinodermatitis. We shall report the results of the test for hematoporphyrin in the urine.

DR. MESTRE: I agree with the diagnosis of vitiligo. I wish to report that I have performed experiments in Dr. Pardo-Castello's clinic on the protection of the skin by certain substances against the short wave rays of the spectrum. I have found that quinine has no protective action.

DR. ABASCAL: I think that the condition is vitiligo. The patches of achromia on the scrotum and penis cannot be explained by the action of the light.

LICHEN SCROFULOSORUM. Presented by DR. MESTRE and DR. ROSELL.

A mulatto boy, aged 11, presented patches of lichen scrofulosorum papules on the back and chest. In spite of his apparent good health, the patient had symptoms of pulmonary tuberculosis. The skin condition had existed for seven months.

LICHEN SPINULOSUS. Presented by DR. SAENZ.

A white girl, aged 5, had suffered from slight vesperal fever for several days previous to presentation. The skin condition developed rapidly in about four days. The papules were purely follicular, without any inflammatory symptoms and were surmounted by a corneous projection which reached a length of about 2 mm. Biopsy was refused by the parents. There were no symptoms of tuberculosis; the Pirquet test was negative.

ERYTHEMA NODOSUM AND SCROFULODERMA. Presented by DR. MESTRE.

A colored girl, aged 9 months, four months after birth had enlarged glands on the left side of the neck which broke down and ulcerated, leaving suppurating sinuses. Five days before presentation, the patient developed several nodules about the size of a filbert distributed irregularly on both legs, thighs and buttocks. There were about fifteen of these nodules, which were hard on palpation and rather painful on pressure. They were dark red or violaceous.

The temperature fluctuated about 37.5 C. (99.5 F.). Mantoux and Pirquet tests gave positive reactions. The blood count showed anemia and a leukocytosis of 19,100. The Wassermann reaction was negative.

DISCUSSION

DR. PARDO-CASTELLO: I agree with the diagnosis. I should not commit myself as to the nature of the erythema nodosum. It may be due to the tuberculous infection of the patient or to the secondary infection present in the broken down glands of the neck.

DR. MESTRE: I am inclined to believe that in this case the lesions of erythema nodosum are due to tuberculosis.

DR. SAENZ: This type of lesion is due to capillary embolism in cases of chronic focal infection. The focus of pyogenic infection is undoubtedly in the neck.

FAVUS OF THE SCALP. Presented by DR. PARDO-CASTELLO and DR. RIO.

S. K., a white boy, aged 5, born in Poland, came to Cuba with his parents about two years previous to presentation. There was a brother who had suffered from a similar condition for several years. A few weeks before he left Poland his father had noticed small areas of desquamation and alopecia on the scalp. At the time of presentation the patient had about fifteen typical scutula disseminated over the scalp. Examination of the crusts and cultures showed *Achorion schoenleinii.*

DISCUSSION

DR. PARDO-CASTELLO: We have no favus in Cuba. This patient should be reported to the board of health. This is the second case of favus reported in this country, both in immigrants from Central Europe.

CHRONIC PEMPHIGUS. Presented by DR. GRAU and DR. PELAEZ.

A white man, aged 48, had syphilis twenty-four years before presentation. About seven months before presentation he noticed the appearance of inflammatory lesions behind the ears which were diagnosed as seborrheic dermatitis. He also received arsphenamine therapy, although the Wassermann reaction was negative. The seborrheic lesions spread to the scalp and face and then to the rest of the body, and bullae began to form. At the time of presentation the clinical picture was that of chronic pemphigus. Nikolsky's sign was present. The general health of the patient was unimpaired; the Wassermann reaction was negative; the results of urinalysis were negative, and the blood count was normal.

DISCUSSION

DR. PARDO-CASTELLO: I agree with the diagnosis. I should like to know the result obtained in a case of pemphigus presented by Dr. Tiant in a former meeting.

DR. TIANT: My patient died after having tried all sorts of treatment, including Davies'.

DR. MESTRE: I have seen several cases of pemphigus in Dr. Pardo-Castello's clinic. Many of them begin as impetiginous eczemas or dermatitis. This case has a similar history.

PELLAGRA (?). Presented by DR. FERRER.

A white man, aged 33, an alcohol addict, had always been a healthy man until about a month before presentation, when he had a crisis of diarrhea and mental disturbances with acute delirium. About that time an erythema was noticed on the dorsum of both hands and around the neck. At the time of examination the patient had a typical dark red, almost violaceous erythema, with some desquamation and pigmentation.

DISCUSSION

DR. FERRER: In presenting this case I wish to have the opinion of the members of the association concerning the diagnoses of true pellagra or of pellagroid erythema due to alcoholism. I am inclined to consider this type of case as pellagroid erythema and not pellagra as observed in the countries where this disease is endemic. Pellagra is a disease that may appear sporadically anywhere, but most cases are seen in the rural districts. The Cuban cases are mostly seen in the large centers of population. Pellagra affects women more than men; in Cuba, however, the great majority of cases occur in men. I have never seen a case of pellagra in children in this country. In all Cuban cases the influence of alcohol is evident, and all of us have agreed that alcoholism is undoubtedly an important etiologic factor in our cases. Only by accepting the view that alcohol may cause a metabolic disturbance preventing the assimilation of vitamins can pellagra be explained here.

DR. MESTRE: In my opinion the case presented by Dr. Ferrer is a case of true pellagra. So long as the problem of the etiology of this disease is unsolved, it is impossible to demonstrate with facts the existence of anything that could be called pellagroid syndrome.

DR. PARDO-CASTELLO: I cannot agree with Dr. Ferrer. I do not think there are pellagroid erythemas or pellagroid syndromes. I have seen the majority of cases of pellagra in Cuba since 1913. We had about fourteen cases in 1914; we did not see any cases then for several years, and about 1920 sporadic cases were seen now and then. In the past four or five years, they have been more numerous and the mortality rate has been higher than it had ever been before. I do not think that

alcoholism and pellagroid syndrome due to alcohol would show in small outbreaks like these. I have, of course, noticed that practically all cases of pellagra in Cuba occur among alcohol addicts, and I have often wondered how much influence alcoholism has on pellagra in Spain, Italy and even in the United States where people drink much more than we do here, without being considered alcohol addicts. I have seen some of these patients die with the nervous, digestive and cutaneous symptoms of pellagra, as typical as those observed elsewhere. If our cases have exactly the same symptomatology, run the same course and end in the same way as cases of pellagra in other countries, I do not see the reason for calling them pellagroid erythema. In many of my cases the symptoms of the skin have disappeared, the patient dying with acute diarrhea, rapid cachexia and mental symptoms of acute mania or deep melancholia. Would anyone call these cases of pellagroid erythema?

LUPUS ERYTHEMATOSUS DISEMINATUS. Presented by DR. PARDO-CASTELLO and DR. MESTRE.

A breast-fed, colored baby, aged 3 months, weighing 12 pounds (5.4 Kg.), a few days after birth presented erythematous patches on the face and arms, which later spread over the chest, neck, buttocks and legs. These patches were dark red and well defined, varying from 1 to 5 cm. in diameter. The central portion of the patches presented a thin desquamation and some pigmentation. In some patches in retrogression there was complete depigmentation. Atrophy was slight in the older lesions. There seemed to be no subjective symptoms. The patient had a slight rise in temperature in the evenings. General examinations showed no infection of the lungs or disturbance of any internal organ. The Wassermann reactions were negative in the child and in the mother. The blood count was normal. Pirquet and Mantoux tests gave negative results.

DISCUSSION

DR. PARDO-CASTELLO: I expected a spirited discussion on this case. If the condition is lupus erythematosus, as I believe it is, this is the youngest patient I ever saw suffering from the disease. The rapid evolution and the vesperal fever make the prognosis doubtful. I am glad you all agree with the diagnosis.

A CASE FOR DIAGNOSIS. Presented by DR. ABASCAL.

A Spaniard, aged 50, a clerk, had gone to Cuba twenty-three years before presentation. He had always been a healthy man until two years before presentation when he observed that his right hand began to get thinner and he felt crawling sensations on the hand and arm. Three months later his left hand suffered similar atrophic changes. The cubital nerve was thickened on both sides. Sensations were diminished to pain and temperature. Hansen bacilli were not found. The Wassermann reaction was negative.

DISCUSSION

DR. FERRER: I think that this is a case of nervous leprosy.

DR. PARDO-CASTELLO: I agree with the diagnosis of leprosy.

DR. CASTRO-PALOMINO: I do not think that we have sufficient data to make a diagnosis of leprosy. I should advise a lumbar puncture before ruling out syphilis.

DR. MESTRE: I agree with the diagnosis of leprosy. In this type of cases Hansen bacilli are found only in the nerves.

DR. ABASCAL: I accept the diagnosis of leprosy. I shall perform a lumbar puncture and report at a future meeting.

DERMATITIS EXFOLIATIVA. Presented by DR. PARDO-CASTELLO and DR. RIO.

A white man, a Cuban, aged 68, six months before presentation had erythematous patches around the genitals. In the course of three or four months these

patches spread to the abdomen and then to the rest of the skin. Itching was intense. At the time of presentation the skin of the whole body was red and inflamed, covered with large and medium-sized scales which shed continuously, forming a large heap on the bed at the end of each day. The skin was harsh and thickened. The scalp was also scaly and covered by sparse, dry, brittle hairs. Pruritus and chills made the patient uncomfortable. The nails of the fingers and toes were dry, friable and longitudinally ridged. The Wassermann reaction was negative. The blood showed: red cells, 3,215,000; white cells, 20,440; polymorphonuclears, 34.7 per cent; lymphocytes, 34.7 per cent; mononuclears, 6 per cent, and esoinophils, 24.3 per cent. Biopsy showed parakeratosis, hyperacanthosis and cellular infiltration of the papillary layer, especially along the blood vessels. This infiltration was made up of plasma cells, lymphocytes, round cells and scarce polymorphonuclears.

DISCUSSION

DR. FERRER: The case is interesting, especially the blood count. It may turn out to be a cutaneous leukemia. Hexheimer has shown that eosinophils may be greatly increased in cases in which the cutaneous reticulo-endothelial system is chronically irritated.

DR. ALFONSO: Parasitic diseases, particularly intestinal parasites, should be investigated in view of the high eosinophil count.

CHICAGO DERMATOLOGICAL SOCIETY

Regular Meeting, Nov. 21, 1928

FRANCIS E. SENEAR, M.D., *President, Presiding*

LICHEN PLANUS LINEARIS. Presented by DR. WAUGH.

A woman, aged 39, had a disorder of five months' duration, which began as an itching eruption in the left axillary region, and gradually spread in a linear manner to the forearm, wrist and little finger, where the involvement was less than one-half inch (12.70 mm.) wide. On the forearm the involvement was about 1 inch (2.54 cm.) wide, and on the upper arm a slightly wider, bandlike area was present. Itching was pronounced. The eruption consisted of grouped, flat-topped papules.

Treatment had consisted of injections of corrosive mercuric chloride, and one-fourth unit of roentgen rays at weekly intervals. Six treatments had been given, and the eruption had largely disappeared. Permission for biopsy could not be secured.

DISCUSSION

DR. GOECKERMAN: It is difficult to express a definite opinion, although I thought several areas showed papules. I believe it is a case of lichen planus.

DR. FOERSTER: The discussion of this case with Dr. Ormsby brought up again the old question of differentiating between lichen planus linearis and linear nevus in this particular type of case. The short duration, six months, the severe itching, which has now ceased, and the disappearance of the lesions to less than half of their original number are against the diagnosis of nevus. I examined the lesions closely and carefully and could find nothing that I thought was a typical lichen planus papule, although there were numerous aggregations of small, flat papules, particularly near the axillae, some of them arranged in a more or less annular fashion. I think this type of case is of particular interest because of the idea advanced on the Continent that lichen planus is an expression in the skin of a toxic process, which becomes localized in certain areas because of the influence of the vegetative nervous system on different areas. That is the basis for the

roentgenotherapy instituted by Pautrier. I should like to study a microscopic preparation before making a definite diagnosis, although I lean toward a diagnosis of lichen planus linearis.

A Case for Diagnosis. Presented by Dr. Stillians.

A woman, aged 68, a housewife, had first noticed red spots on the backs of her hands five months previous to presentation. The lesions were not aggravated by soap and water, but gradually increased in size and number. There was slight itching. She had taken no medicine except laxatives during the past six months, but said that she had taken phenolax occasionally until two months before presentation.

The blood count showed: red blood cells, 5,400,000; white blood cells, 7,400; hemoglobin content, 88 per cent. The differential count showed: polymorphonuclears, 52 per cent; small mononuclears, 41 per cent; lymphocytes, 5 per cent; eosinophils, 1 per cent; transitionals, 1 per cent. No fungi were found in potassium hydroxide preparation of epiderm from palmar lesions. The Kahn and Wassermann reactions were negative; the blood pressure was 180 systolic and 92 diastolic. There was no pathologic change in the chest clinically. The urine contained no albumin, sugar or bromine, by the Wile-Belote test.

On the backs of both hands were large, polycyclic lesions consisting of soft, brownish-red maculopapules, from 1 to 3 mm. in diameter, confluent at the border of the patch and less numerous at the center, the dense border varying from 3 to 5 mm. in width. On the backs of several of the proximal phalanges of the fingers were smaller, oval patches of the same kind, the circinate feature being more pronounced in these. Two similar patches were present on the ulnar side of the right hand, beyond the border of the main patch. On the right thenar eminence was a group of lesions which were more papular and less sharply defined. These had a vesicular appearance when the patient was first seen, but on attempting to puncture them they proved to be solid and they soon become red.

A biopsy, which included a papule that was brighter red than most of them, revealed a dense infiltration of round cells in the papillary layer, and below this dense cuffs around the horizontal blood vessels. The epidermis was thinner over the papule, and at one point a marked parakeratosis was seen.

DISCUSSION

Dr. Finnerud: I thought clinically it was a case of lupus erythematosus, but the histologic section was more suggestive of lichen planus.

Dr. Oliver: I do not think it is the type of case we are seeing now that we look on as pellagra.

Dr. White: The patient was presented because of the difference between the clinical and the pathologic observatios although the diagnosis of lupus erythematosus is favored by Dr. Stillians.

Dr. Harry R. Foerster: The clinical picture suggests lupus erythematosus with which may be associated endarteritic changes in the superficial capillaries of the distal portions of the extremities. The patient's age and a reported high blood pressure favor the latter conclusion.

Pityriasis Rubra Pilaris. Presented by Dr. Finnerud.

A woman, aged 25, had a mildly itching eruption of the face, hands, neck, elbows, knees and scalp chiefly of three and one-half months' duration. She attributed the condition to sunburn. When first seen by Dr. Finnerud the eruption was of six weeks' duration and was of its present appearance except that it was much less extensive and the eruption on the face was more marked. The eruption had progressed to a point where about one third of the surface of the body was involved. Her basal metabolic rate recently taken was 21.8 per cent below normal. She had been taking thyroid extract in increasing dosage, up to 4 grains (0.260 Gm.)

daily, with improvement and had been using various local preparations. She had lost only 1 pound (0.5 Kg.).

Examination showed large diffuse areas of erythematous, scaling dermatitis of the face and extremities chiefly, with typical follicular, keratotic papules of the dorsum of the phalanges and in areas here and there elsewhere. The involvement of the scalp was marked, and there was moderate ectropion.

DISCUSSION

DR. WIEDER: I think the case is typical of the condition. I brought up the question of whether there was any association of tuberculosis in the case, for I recall the case of a young girl who showed a typical patch of lupus vulgaris on one arm, and have noted similar associations in the literature. It may be of interest to investigate the case further from that standpoint.

DR. HARRY R. FOERSTER: If Dr. Finnerud is interested in experimental therapy in connection with this case, I should suggest irradiating the region of the thymus gland in accordance with the technic introduced by Brocq for the treatment for psoriasis.

DR. FINNERUD: I am glad of Dr. Foerster's suggestion. So far as tuberculosis is concerned, from the physical standpoint the examination by her general practitioner gave negative results, and the history is negative, but no further search than that has been made. I think the —21.8 metabolic rate is interesting. Under thyroid medication she has improved greatly during the last three weeks.

PURPURA ANNULARIS TELANGIECTODES. Presented by DR. FREDERICK SCHMIDT.

A white woman, aged 21, first noticed red spots on her arm about eight months previous to presentation, following an abscess of a tooth. Since then a similar eruption had appeared on the legs, and the eruption on the arm was disappearing. The Wassermann reaction of the blood was negative. The blood pressure was 112 systolic and 82 diastolic.

On the right arm and both legs, including the thighs, were numerous areas of telangiectasia, the size of a split pea, from which the color could be removed by pressure, but the majority of the lesions were small coin-sized, reddish-brown, slightly depressed purpuric areas, from which the color could not be removed by pressure. Scales were present over the atrophic lesions.

Calcium had been administered orally for the past two months.

DISCUSSION

DR. MITCHELL: I was interested in this case, having in mind purpura annularis telangiectodes, but from what I could make out it did not appear to be that disorder. I have no diagnosis to offer.

DR. OLIVER: I thought the case resembled Majocchi's disease more than anything else, but do not believe it is that disorder.

DR. HARRY R. FOERSTER: There were evidences of cutaneous atrophy, particularly about the ankle. My impression was that of a telangiectatic type of lupus erythematosus because of the predominance of atrophy and telangiectasia. I did not observe the characteristic annular configuration and the purpura of Majocchi's disease.

DR. ZEISLER: I think this case represents a type of purpura that may come from wearing insufficient clothing.

DR. BECKER: The lesions showed atrophy, and I thought the atrophic plaques were larger than the telangiectatic plaques. For that reason I should not want to put the case in the Majocchi group and think the patient should be observed further.

LUPUS ERYTHEMATOSUS, ACUTE, DISSEMINATED. Presented by DR. FINNERUD.

A woman, aged 35, had an eruption of the face, neck and chest, of six weeks' duration, which appeared one week following the extraction of three teeth. She

said that for eight months previous to the appearance of this eruption she had a red spot, the size of a finger-nail, beneath the right eye and on the upper lip. She complained of periodic burning and other sensation but practically no itching. Complete physical and blood examinations, including a Wassermann test, repeated urinalyses, and numerous sensitization tests by her general physician were without noteworthy observations. Her family and personal past histories were essentially negative. When the patient was first seen by Dr. Finnerud about five weeks before the present examination, the eruption was of its present appearance but not so extensive. She had been in good health since the appearance of the eruption and, so far as she knew, had had no fever. Three days before presentation she had an attack of severe abdominal cramps which was rapidly and entirely relieved by an enema. This was not preceded by anything unusual in her diet.

Examination revealed a diffuse, bluish-red, symmetrical, erythematous dermatitis of these areas, with little infiltration and scaling, except on the middle third of the chest, where the involvement was patchy and scaling. There was involvement of the vermilion border of the lips but none in the mouth. Her temperature was normal.

DISCUSSION

DR. GOECKERMAN: I thought this was rather an acute type of lupus erythematosus, but do not believe it is the type of case for roentgen or gold compound therapy.

DR. BECKER: Some of these patients have responded well to the administration of neosilver arsphenamine, which does not cause such a marked reaction as the gold thiosulphate.

DR. GOECKERMAN: I tried the neosilver arsphenamine several years ago in a few cases, and it caused a bad reaction in every case.

DR. MITCHELL: I gave one injection of a gold compound and sodium thiosulphate last year to a patient with an acute case, and the patient promptly died. The patient was hopeless at the time, however, so I am inclined to absolve the drug from blame.

DR. ORMSBY: I think the conception of acute disseminated lupus erythematosus should be that of a patient gravely ill, with associated symptoms on the skin. There are disseminated cases that are subacute and unaccompanied by constitutional symptoms. The present case illustrates this group. On account of the preponderance of constitutional symptoms, the subjects of acute disseminated lupus erythematosus come under the care of specialists in internal medicine. We saw a patient not long ago with the disseminated type of the disease, in whom the acute stage had passed. The treatment was started by Dr. Osborne, who did not use gold sodium thiosulphate until the acute symptoms had subsided. Since the patient before us is not febrile and the acute stage is passed, I see no reason why she should not be given gold sodium thiosulphate.

DR. FINNERUD: I am grateful for the discussion. I was afraid to institute treatment with a good compound, for on some days her face has seemed feverish, in spite of the fact that she is not known to have had any rise in body temperature. I have been using various soothing preparations for several weeks, with no improvement, and have thought of putting the patient to bed.

DR. GOECKERMAN: I think it would be well to keep her in bed at rest for some time before starting the treatment with a gold compound.

LICHEN PLANUS ATROPHICUS. Presented by DR. MITCHELL.

A woman, aged 31, had a lesion on the nucha of two and one-half years' duration. The eruption began with small lesions which coalesced. She also had a dermatitis on the lids which was evidently due to a cosmetic irritation.

When first seen in May, 1928, there were four contiguous lesions to the left and parallel with the midline of the nucha. The smallest was 2 cm. and the largest 4 cm. in diameter. The lesions were sharply defined and grayish-white, with characteristic orificial plugs. Radiotherapy had resulted in a marked improvement.

LICHEN PLANUS SCLEROSUS ET ATROPHICUS. Presented by DR. OLIVER and DR. FINNERUD.

A woman, aged 26, whose present and past general health had been good, had a slightly itching skin disorder of the right side of the neck, of about one year's duration. She said that when the condition was first noted it was in the form of numerous white specks and that the patch had formed by the fusion of these specks. She further stated that she had received numerous violet-ray treatments and had used local preparations without improvement.

Extending from the right temporoparietal portion of the scalp to the base of the neck was a sharply demarcated, white band of moderately infiltrated skin, about 4 cm. wide, its surface roughened by numerous minute, follicular plugs and slight scaling. At its borders, particularly in the lower third, were numerous discrete, shiny, milky-white puncta, the size of a pinhead or larger, which were devoid of appreciable infiltration. There were no noteworthy observations in the mouth. A biopsy had not been obtained.

DISCUSSION

DR. WIEDER: I think these are both cases of atrophic lichen planus. The photograph suggested that the atrophy was an end-result of the condition in the first case. The condition in the second case I considered more doubtful, but thought it might be a lichen planus atrophicus, or possibly a scleroderma of superficial type, and I believe a linear nevus must also be considered.

DR. MICHELSON: I agree with the diagnosis in the first case, but I am a bit doubtful about the second. The border of the lesion is not sharp as one would expect in morphea, and there is no pigmentary halo. The keratotic plugs, I think, may be disregarded. I have watched a case of undoubted morphea in which these plugs developed.

DR. ORMSBY: I think the diagnosis in the first case is atrophic lichen planus. The second case is open for investigation. I have seen several of these cases in which the patients showed linear patches on the side of the neck, with well defined margins, and in practically all of them the condition has proved to be guttate morphea in which the lesions had fused forming patches. In that type one does not find the violaceous margin of ordinary morphea. There may, however, be a brown margin. I was glad to hear Dr. Michelson speak of the plugging, for that has been an important feature in the diagnosis. My conception of this feature has been that there are from one to several black horny plugs in each white papule. In the present case the whole surface is hyperkeratotic in place of definite keratotic plugs. Morphea, however, is strongly suggested.

DR. HARRY R. FOERSTER: In the second patient the white patch extended without interruption for some distance on the scalp. I believe that is one feature favoring morphea as opposed to lichen planus atrophicus.

DR. MICHELSON: Does Dr. Ormsby consider lichen atrophicus an end-result of lichen planus?

DR. ORMSBY: No, not as an end-result of lichen planus. In the major portion of the cases there are no ordinary lesions of lichen planus.

DR. MITCHELL: I presented this case because I thought it was rather interesting in the way of therapeutic result. The patient was rather difficult to manage and extremely skeptical, but came when she was told to, and I was pleased to see the improvement, which was more marked than I anticipated.

DR. OLIVER: I considered the condition in the second case one of lichen planus atrophicus, but think nothing but a biopsy will settle it definitely. The patient has been treated with the quartz lamp, which may have added to the changes.

DR. FINNERUD: We had an appointment with the patient to take a biopsy, but she broke her leg and is out today for the first time. We will try to secure one and report later.

NOTE: The histologic examination supports the diagnosis and is detailed in the report of this case as presented at the meeting of the Mississippi Valley Dermatological Association in January, 1929.

LICHEN PLANOPILARIS. Presented by DR. REUBEN NOMLAND.

A boy, aged 16, who had had no previous cutaneous disease, first noted pigmented patches on his shins about six months before presentation. There were no subjective symptoms. He said that the earliest lesions were horny plugs which occurred in groups and coalesced to form patches which slowly enlarged.

The lesions were located almost exclusively on the extensor surfaces of the extremities, below the elbows and knees. The mucous membranes and the body were free from infection. On the upper extremities the lesions consisted of a few small patches, which were made up of a number of grouped, follicular, keratotic plugs. The lesions were more numerous on the legs, where there were a number of dark brown, pigmented patches, some with a diameter of 3 cm. The pigmented patches were studded with keratotic plugs which were less noticeable at the time the patient was presented than they were before.

A biopsy was taken from one of the lesions on the leg. The epidermis showed a slight degree of hyperkeratosis with marked plugging of the orifices of the hair follicles and extreme atrophy of the follicular epithelium. There was an increase in the stratum granulosum in some places. Beneath the epidermis were spaces such as those found in other forms of lichen planus. The prickle cell layers were fairly normal except for the atrophy of the follicles and a slight degree of colliquative degeneration in some places. The upper cutis was occupied by a fairly dense, diffuse infiltrate of small round cells. The infiltrate was sharply limited at its lower margin as in other forms of lichen planus. There was also some infiltrate of small round cells about the deeper portions of the hair follicle. The sweat glands and the capillaries were the site of a slight infiltrate. There was increased pigment in the basal cell layer as well as in the chromatophores of the cutis.

DISCUSSION

DR. GOECKERMAN: I think this represents a residual pigmentation of a preceding lichen planus.

DR. NOMLAND: There is marked keratotic plugging of the follicles, and the histologic section seems to be fairly typical of lichen planus.

NEVUS. Presented by DR. OLIVER.

A Bohemian child, aged 7 months, had red areas on the buttocks and the adjacent portion of the thighs, with a similar lesion, the size of a quarter, in the midline of the abdomen just below the naval. These lesions were first noted at the age of 2 weeks. During the past two weeks she had developed a psoriasiform plaque on the front of each shin. There was apparently no itching.

DISCUSSION

DR. OLIVER: I presented the child because of the similarity of the lesions to the erythema of Jacquet, and because I considered it a rather unusual type of case.

DERMATITIS (EXFOLIATIVE). Presented by DR. BECKER.

A man, aged 58, developed an eruption of the buttocks seven months prior to presentation, two weeks after an injection of tetanus antitoxin which was administered subcutaneously in the shoulder. The eruption spread and involved the entire body in three months. He used oil locally and took baths; he also took pills (arsenic?). His hair fell out one month after the onset of the illness, but returned.

Examination revealed a generalized exfoliative dermatitis, with thinning of the hair and thickening of the nails. The teeth were carious. The urine contained a few hyaline and granular casts, occasional white blood cells, and a few red blood cells. The Kolmer-Wassermann and Kahn reactions of the blood were negative. The blood count showed 4,800,000 red blood cells, 11,200 white blood cells and

a hemoglobin content of 90 per cent. The differential count revealed: polymorphonuclears, 45 per cent; lymphocytes, 27 per cent; eosinophils, 25 per cent; basophils, 2 per cent; endothelial cells, 1 per cent.

a hemoglobin content of 90 per cent. The differential count revealed: polymorpho-

Histologic examination showed that the stratum corneum was thin, loose and parakeratotic. The stratum granulosum was practically absent. The stratum germinativum was acanthotic and showed slight edema. The rete processes tended to be broad and long. The papillae showed moderate edema and were narrow and long. In the papillae and superficial dermis was moderate round cell infiltration. This extended more deeply along the vessels.

DISCUSSION

DR. HARRY R. FOERSTER: I consider this as possibly an early case of lymphoblastoma, though there are no positive observations to support such a diagnosis. The histologic section showed nothing more distinctive than a diffuse inflammatory process.

DR. ZEISLER: We had this patient at the Cook County Hospital for several months and classed the case as one of lymphoblastomatous type of exfoliative dermatitis.

DR. MICHELSON: I think one would have to be guarded in stating that this case is going to develop into a type of lymphoblastoma. At the present time my diagnosis would be exfoliative dermatitis.

DR. MITCHELL: Has the patient had any sodium thiosulphate? If not, I should suggest that daily intravenous injections of 1 Gm. be given.

DR. GOECKERMAN: I think the case is unusually interesting, but could not say it was secondary to a lymphoblastomatous disease. It seems to me the man had some pitting of the nails that was suggestive of psoriasis. The enlarged glands might be explained as secondary to the irritation of the skin.

DR. ORMSBY: The leukocyte count in this case was a little different when seen by me one month ago; he then had 8 per cent eosinophils whereas he now has 25 per cent, together with other minor changes. At that time there was no suggestion that the case belonged to the group of lymphoblastomas. I have been seeing general exfoliative dermatitis for years and am interested in noting the number that eventually fall into this group. While I believe many unclassified cases will fall into one group, it does not seem likely that this will explain all the doubtful ones. This case belongs to the group of general exfoliative dermatitis of unknown etiology that may develop into lymphoblastoma, but cannot be so placed now. Two years ago I showed two patients before the Society with dermatitis exfoliative of the Hebra type, in one of which leukemic blood changes were present. No abnormal changes existed in the second case. Such changes, however, subsequently developed, as was shown by Dr. Wile at his clinic one and one-half years later.

DR. HARRY R. FOERSTER: In offering the diagnosis of early lymphoblastoma I had in mind what Dr. Wile told us last year in Ann Arbor, namely, that the diagnosis of lymphoblastoma cannot be made clinically or by the blood changes in the early stages. The early cases are typical of exfoliative dermatitis, and it is only by the later developments that the diagnosis of lymphoblastoma is definitely established. The disease should be kept in mind when considering the prognosis of a case like the present one.

DR. BECKER: We felt that no definite diagnosis could be made at present, except exfoliative dermatitis, and that time will solve the problem.

A CASE FOR DIAGNOSIS. Presented by DR. FINNERUD.

A single woman, aged 32, had a swelling of the right cheek of three years' duration. She said that it was the size of a finger-nail but otherwise was of its present appearance when first noticed by her, and that it had gradually assumed its present size. It was at a standstill so far as she could ascertain. The area

involved was sometimes redder than at others. The lymph glands of the right side of the neck became slightly tender and enlarged at times. Thorough examination by a rhinologist disclosed no nasal or sinus infection. Her teeth had been thoroughly examined and corrected. The Wassermann reaction of the blood was negative. There was no history of previous disease of the skin except mild acne. She said that she had never had injections of paraffin or oil. Thorough physical and laboratory examinations by competent internists revealed no noteworthy observations. She had taken thyroid extract over a considerable period of time without change. She believed that in the past few weeks the same process had been developing on the left cheek and said that it had become conspicuous only during the past week or so.

Examination revealed a soft swelling involving the greater portion of the front of the right cheek. The skin over it was a little redder than the skin elsewhere. The area involved was a little larger than the diameter of a dollar and was not sharply demarcated. Two superficial cervical lymph glands on the right side of the neck were palpable but small, and none could be felt on the left side. Along the right angle of the nose a pea-sized, deep nodule was palpable, which she believed to be the site of a former acne lesion. The left cheek showed an area of swelling, the size of a dime, and slight erythema immediately beneath the left eye.

DISCUSSION

DR. MCEWEN: I should like to ask whether in the history there was any suggestion of a hereditary factor? In some instances the development of extra folds under the eyes in the later years of life is a familial trait. If such a condition is produced by low-grade infection I wish to point out that this woman has a large amount of apparently infected tonsillar tissue and two dead teeth. As regards the latter, I should like to ask just how far the medical profession is wise in accepting, as the verdict of a court of last resort, the dentist's decision that a dead tooth is harmless when serious conditions, possibly due to focal infection, may be present elsewhere in the body? It is well recognized today that a crowned tooth even though negative to x-rays may still be the seat of actual infection.

DR. FINNERUD: The patient says she is going to do desperate things if she does not get better soon. The disorder apparently is developing on the other side. She has been told that her tonsils should be removed; the teeth supposedly have been corrected. It was thought that the nose might be the focus of infection, but a rhinologist says it is all right. There is a nodule on the right side which cannot be seen but can be palpated, and which appeared shortly after the pimple of which she complained. The right cheek is much redder on some occasions than on others. I have not investigated the familial side of the case.

DR. FOERSTER: It is important in this connection to rule out early sarcoid and changes due to injections of paraffin, although I think the latter have been definitely eliminated from the discussion. Instances of this sort that I have seen have nearly all been directly traceable to a nasal source, and begin with a lymphangitis which becomes fixed, and result in fibrosis and an edema in the loose tissues in the areas adjacent to the nose. I think that this is explanatory of the condition here.

LICHEN PLANUS OF ORAL MUCOUS MEMBRANES. Presented by DR. WHITE for DR. STILLIANS.

An American school teacher, aged 39, said that for three months the inside of her cheeks had been rough; this condition produced an unpleasant sensation when eating and speaking.

Examination revealed a network of fine, white lines on the inside of each cheek. On both sides of the tongue were oval lesions, about 1 cm. in the long axis by 0.5 cm. wide, the border being slightly elevated and grayish white. There was no papular eruption on the skin, and no itching was complained of.

DISCUSSION

DR. ORMSBY: I think it is difficult to distinguish between lichen planus and leukoplakia when there are no lesions on the skin to confirm the diagnosis. I think sometimes the only way to determine it is by a histologic examination. Linear lichen planus lesions of the mucous membrane are resistant to treatment, but less so than those of leukoplakia. During the past several weeks I have seen patients with lichen planus of the mouth with lesions identical with these; so I agree with the diagnosis.

DR. ZEISLER: I have seen patients who have had an excessive amount of treatment and who still have lichen planus in the mouth. It seems to be much more resistant on the mucous membrane than on the skin.

DR. FOERSTER: A distinguishing feature of the lesions of lichen planus, of the buccal mucosa particularly, is the presence of a small dot or node at the intersection of the linear lesions. That feature is well shown in this case, for the patient presents numerous dots, the size of a small pinhead.

DR. WHITE: We have been unable to secure a biopsy, for the patient has been subjected to considerable medical handling.

A CASE FOR DIAGNOSIS. Presented by DR. EUGENE P. LIEBERTHAL.

A woman, aged 46, first noted the present eruption about five years previous to presentation, when numerous nodules developed on her face, and gradually spread to the neck, chest, back and arms. The lesions were small at first but showed a tendency to increase in size. There were no subjective symptoms at any time, nor was there increased perspiration. Her general health was good, and she had had no previous disease of the skin.

DISCUSSION

DR. FINNERUD: This was a case of Recklinghausen's disease.

DR. BECKER: I agree with that diagnosis.

DR. ORMSBY: I agree with the diagnosis of Recklinghausen's disease. The lesions are too soft, and the distribution and color differ from those seen in syringocystadenoma or syringoma. The patient I showed with syringoma had lesions that resembled those in this case, but they were hard, more pearly, and some were dark brownish red.

DR. SENEAR: I was interested because I thought the major part of the lesions resembled those seen in the Schwiniger-Busse type of tumor-like new growths. Aside from one or two of the lesions that had the color of Recklinghausen's disease the case seemed to me to fall more into the former group. Even having seen Dr. Pusey's case, which was the first described in this country, I believe those cases are an unusual type of Recklinghausen's disease. We showed one case here in which everyone agreed to the diagnosis except Dr. Waugh, and later Dr. Oliver brought the same patient in from the Cook County Hospital with typical Recklinghausen's disease. I have at present a patient with tumors exactly like those described by Dr. Pusey, but the patient also has the typical Recklinghausen tumors in other portions of the body.

DR. EUGENE P. LIEBERTHAL: I thought of a syringocystadenoma, and biopsy was made at that time. The result of the histologic study will be reported at a later date.

PEMPHIGUS. Presented by DR. FINK (by invitation).

A woman, aged 57, had a disorder of eleven months' duration, which began as painful lesions in the mouth. Three weeks prior to presentation bullous lesions developed on the skin over the pubic area and spread to the abdomen, back and anogenital regions. The lips, buccal mucosa and palate showed eroded bullae. She said that several years ago she had what was called a "weeping eczema" of the scalp. The Wassermann reaction of the blood was negative. There was slight itching.

DISCUSSION

DR. FINK: I should like to know whether there is anything new in the therapy of pemphigus.

DR. HARRY R. FOERSTER: I consider it necessary in this case to rule out bullous erythema multiforme and also an eruption produced by phenolphthalein. The disorder is of one month's duration. Though the patient is constipated and takes laxatives frequently, I could not obtain a history of a phenolphthalein type of laxative having been taken.

DR. FINK: I neglected to mention that the patient had had continuous constitutional symptoms, and I think this somewhat favors pemphigus.

A CASE FOR DIAGNOSIS. Presented by DR. BECKER.

A woman, aged 46, developed a blister on the lower lip eight years before presentation, following the use of hair dye. This was followed by erythema and edema of the chin, lip and adjacent portion of the face. At this time the region was erythematous and edematous, the chin pitting on pressure. The hair had been dyed continuously since the onset, and the condition was becoming more extensive.

The physical examination, the Wassermann reaction of the blood, the urinalysis and the urea index were negative.

DISCUSSION

DR. HARRY R. FOERSTER: My impression of this case favors the consideration of a streptococcic infection having occurred at the time of the vesicular dermatitis on the lip. The original condition may have been a hair dye dermatitis, but the present one appears to be a chronic lymphangitis.

DR. ORMSBY: In October, 1920, we saw this patient, and Dr. Mitchell had charge of her case most of the time. She gave no history at that time of any outside irritant, and the disorder was not indicative of such a cause, but there was a typical, acute, edematous process that would develop suddenly, like an angioneurotic process. At that time it was of about four months' duration. We saw her off and on for several months, during which time she had some hemotherapy and practically recovered. Two years later I saw her twice, and again in 1925. The condition today presents a somewhat different clinical appearance, but I think it is due to obstruction of the lymph channels, and that it is practically elephantiasis nostra.

SKIN SENSITIZATION TO SILK. Presented by DR. FINK.

A girl, aged 4, presented an itching, patchy eruption about the chest and arms, which was vesicular in type. She was first seen at the Children's Hospital about a month prior to presentation, when her mother volunteered the information that she was sensitive to silk, and that she could not come in contact with it without developing irritation. She gave a history of having had infantile eczema since she was 2 months of age.

Investigation showed that stimulating the skin of one arm with silk caused a definite wheal, with surrounding erythema, while a control conducted on the other arm with gauze had no effect.

DISCUSSION

DR. WIEDER: I think all we can say is that this is a perfectly typical case of acute sensitization. The question may arise as to the mechanism of the sensitization. The question came up as to whether the coloring of the silk had anything to do with it, and that should be ruled out.

DR. ORMSBY: Relative to hypersensitiveness, about ten days ago I gave a 2 per cent sulphur ointment to a patient suffering with seborrheic dermatitis. The patient called up the next day and reported an acute reaction. On testing it personally, we noted that a reaction began in one minute and forty-five seconds after applying the ointment. The immediate symptoms consisted of redness, swelling, edema and burning sensations.

DR. FOERSTER: It came to my mind that several years ago Dr. Corson and the group at the Jefferson Hospital in Philadelphia reported the case of a patient with a silk dermatitis, in which, after a great deal of investigative work, they were finally able to prove that a gummy substance, a product or secretion of the silkworm which is attached to the silk itself, was the responsible agent in the production of the dermatitis. The case was one of recurrent dermatitis produced by wearing a silk waist.

DR. FINK: The mother said that the child was presented with a silk dress, the color of which I am unable to determine at present, and mentioned one or two other instances in which the child came in contact with silk, with the same result. I understood that it was the gummy substance that Dr. Foerster mentioned that was supposed to be the offending agent, but on looking up the manufacture of silk I found that there are two proteins, the gummy substance that glues the fibers together and that has to be washed out and is not present in finished silk material, and second, the silk fibers proper. I thought it was a sensitization similar to an insect urticaria in connection with the protein.

DR. BECKER: How often do patients with sensitization urticaria react when the substance is applied to the unabraded skin? If we are correct in assuming that the site of reaction is in the peripheral vascular system, it would seem peculiar that the substance could penetrate so deeply. I think this case needs further study, from the standpoint of both mechanical urticaria and intradermal injection of the offending substance.

A CASE FOR DIAGNOSIS. Presented by DR. CORNBLEET for DR. SENEAR and DR. WIEN.

A white man, aged 65, developed an itching eruption on the sacral region five years prior to presentation, which, except for short intervals, had persisted. Last year a similar itching eruption developed on the abdomen. About five months before presentation he began taking various patent medicines, including "S.S.S.," and during this time an eruption had developed on the anterior portion of both thighs. In the beginning of the eruption there was itching, but this had ceased. To alleviate the itching, each of the lesions was deeply excoriated, or opened with a knife or other instrument. The patient said that he had suffered from arthritis and neuritis for eight years, and seemed to be under nervous tension. There had been a marked loss in weight and strength during the past two months.

When first seen a week previously there was a somewhat grouped, follicular, nodular, and in some places almost keloidal eruption on the upper portion of the buttocks, the abdomen and anterior surfaces of the thighs. Most of the lesions were the size of a hazelnut, smooth, indurated, well defined, brown to purplish, and elevated about one eighth of an inch above the surface. There were pigmented spots and smooth, atrophic scars as relics of former lesions. Two lesions on the left thigh had a somewhat vegetating appearance, and one had been excised for microscopic study.

The section showed pronounced acanthosis, irregular papillomatosis, the process interlacing and leaving spaces of connective tissue with round cells and a few polymorphonuclears. There were numerous mitotic figures, and in one area a break in the basement membrane, with slight, irregular infiltration of the basal cells into the corium.

The reactions to the Wassermann and Kahn tests of the blood were each 3 plus.

Examination of the blood showed 4,230,000 red cells, 7,500 white cells, and hemoglobin 90 per cent. Urinalysis revealed a faint trace of albumin, many granular casts and pus cells, with a few epithelial cells and mucous shreds.

DISCUSSION

DR. FINNERUD: I had the impression that the lesions on the thighs and arms showed nothing but relics of an eruption produced by bromide or iodide. I understand there is a history of some of these having been vegetating lesions previously.

DR. SENEAR: So far as the history shows, the ingestion of bromides or iodides has been only of recent origin, while the eruption has persisted for five years. We felt from the character of the lesions on the thigh, which were of the vegetative type, that they were in all probability due to scratching, and that the major portion of the lesions were keloids, secondary to neurotic excoriation.

DR. GOECKERMAN: My impression was that the disorder was to a large extent factitial. We frequently see these cases in old persons, who develop an acarophobia. I did not feel that it was a definite keloidal condition.

DR. CORNBLEET: The microscopic specimen shows a good deal of connective tissue infiltration to account for the keloidal factor, and there is a history that he digs the lesions open with a knife.

DR. ORMSBY: The scars were typical of the disorder termed neurotic excoriations, and while the lesions are self-induced they are not factitious. In factitious dermatitis the patients practice deception, whereas in neurotic excoriations they frankly admit digging the skin, thus producing the lesions. The amount of disfigurement occasionally induced is remarkable. The scissors is a common instrument used.

DR. SENEAR: The patient says he does not get relief until he digs the lesions out. He first has itching and then attacks the lesions.

DR. GOECKERMAN: We see these cases commonly, but the patients have definite organic changes, such as arteriosclerosis and so on. I do not consider them neurotic in the true sense.

PITYRIASIS LICHENOIDES CHRONICA. Presented by DR. ZEISLER.

A man, aged 35, had an eruption of eleven years' duration, which consisted of variegated papules, located chiefly on the arms, hands, abdomen and thighs; the glans penis was also involved.

This patient was presented because of the unusual hyperkeratotic lesions that were present around the genitalia and in the popliteal regions.

The Wassermann reaction was negative, and examination of the blood was negative, except for eosinophilia.

DISCUSSION

DR. GOECKERMAN: I think this is an intensely interesting case, largely because of the distribution of the lesions. I agree with the diagnosis.

DR. WIEDER: I agree with the diagnosis, but do not believe it would account for the vegetative lesions.

DR. MITCHELL: I, too, thought the lesion on the glans was particularly interesting.

DR. ZEISLER: I am of the impression that this man at some time received considerable arsenic, and that eventually he will develop multiple epitheliomas in addition to the pityriasis lichenoides chronica.

CLEVELAND DERMATOLOGICAL SOCIETY

H. J. PARKHURST, M.D., *Reporter*

Regular Meeting, Nov. 22, 1928

C. G. LAROCCO, M.D., *Presiding*

KERATODERMIA BLENNORRHAGICA. Presented by DR. COLE and DR. DRIVER.

L. C., a white man, aged 28, a laborer, had gonorrhea in 1923, and an acute flare-up in October, 1928, with epididymitis, prostatitis and arthritis of the left wrist and left ankle. No skin lesions were found at the time of his admission to

the hospital in October, but one week later moist macules appeared on the scrotum and small, dry papules on the penis; large macules, resembling mucous patches, were then found on the hard and soft palate. Results of dark-field examinations and Wassermann tests had been repeatedly negative. The number of lesions had steadily increased up to the time of presentation, involving various parts of the body and assuming a rupioid character. An urethral smear showed *Gonococci*. A biopsy examination of one rupioid lesion was made. Vigorous antisyphilitic treatment, as a therapeutic test, had no apparent effect on the eruption.

DISCUSSION

DR. COLE: This is our third patient with keratodermia blennorrhagica. The first patient was seen in 1914, with an extensive keratotic eruption, involving the palms and soles especially. The condition was not diagnosed then, but was recognized some years later when the pictures were reviewed. The second patient appeared several years ago, with arthritis, thickened nails and lesions on the palms and soles. The present patient was at first suspected of showing a chancre under the prepuce, with a rupial syphilid. There are now some lesions under the nails.

DR. PARKHURST: Pronounced keratoses appear at the sites of normal calloses on the palms and soles. The small erosions on the palate and tongue are remarkable.

DR. BARNEY: Our case at Ann Arbor was much more severe, the scalp also being involved. Local applications and administration of gonococcus vaccine did not result in improvement, but marked improvement followed the removal of the seminal vesicles. This seems to be an early case.

SQUAMOUS CELL EPITHELIOMA. Presented by DR. COLE and DR. DRIVER.

M., a man, aged 60, a plumber, presented a slightly sensitive lesion on the soft palate, which had troubled him for five months. Filtered roentgen treatment had been applied to the regional lymph nodes, and radium therapy and electrocoagulation were proposed for the tumor.

DISCUSSION

DR. PARKHURST: Is electrocoagulation of value in such cases?

DR. COLE: Yes, in some cases. At Memorial Hospital in New York a large dose of radium is given, and ten days later electrocoagulation is used. The outlook is doubtful.

SQUAMOUS SYPHILID (?). Presented by DR. COLE and DR. DRIVER.

A. C., a woman, aged 29, said that she had had malaise, backaches and some loss of weight two months previous to presentation. Two weeks before she was said to have had a fever, lasting a week, with a rash, sore throat, cough and pain in the right side of the chest. Generalized exfoliation had followed and persisted, with extensive involvement of the palms and soles. There was some loss of hair in the scalp and eyebrows, a split papule at the left angle of the mouth and moist papules on the upper left side of the thigh adjoining the perineum. The Wassermann reaction was strongly positive.

DISCUSSION

DR. DE WOLF: Two weeks ago the patient had sore throat and fever. Perhaps she had scarlatina.

DR. DRIVER: The desquamation suggests scarlatina.

A CASE FOR DIAGNOSIS. Presented by DR. COLE and DR. DRIVER.

R. R., a colored boy, aged 4, had a frequently recurring pruritus for a period of three years. A symmetrical papular eruption was noted chiefly over the arms and legs, but the trunk, face and scalp were also involved. There were some

bullae, scales and crusts, and generalized lichenification. Generalized enlargement of the lymph nodes was present, especially in the groins. The patient had varicella, which accounted for the vesicular lesions.

DISCUSSION

DR. PARKHURST: The papular eruption, chiefly on the extensor surfaces of the extremities, is apparently prurigo mitis.

DR. RAUSCHKOLB: A diagnosis of lichen scrofulosorum was considered at first, but tuberculin tests were negative.

DR. BARNEY: The enlarged lymph nodes suggest Hodgkin's disease; one of them should be examined microscopically. The adenopathy may be due to infection from scratching.

DR. COLE: The patient's age is against a diagnosis of Hodgkin's disease. There is much secondary infectious eczematoid dermatitis, but one can find crusted papules, and this, including the enlargement of the lymph node, is typical of the prurigo of Hebra. The child's fatigued appearance also goes with this condition. It may become more severe and be more than a prurigo mitis.

BASAL CELL EPITHELIOMA. Presented by DR. FISHER.

Mrs. W. J. K., aged 40, had first been seen in July, 1924, with a lesion on the chin which had been fulgurated one year previous to presentation. The lesion was the size of a hazelnut, with an elevated border. Apparent healing followed applications of roentgen rays and radium, but the lesion recurred after two years. Therapeutic suggestions were sought.

DISCUSSION

DR. CUMMER: Have x-ray pictures of the jaw been made?

DR. FISHER: Yes, the jaw does not seem to be involved.

DR. DRIVER: A biopsy should be done. This looks like some cases of radiodermatitis, breaking down and persisting, but not showing a malignant condition on biopsy study. A plastic operation will probably be needed. There should be no further irradiation.

DR. CUMMER: I agree with Dr. Driver regarding the possible end-results of irradiation.

DR. COLE: I agree that there does not appear to be a malignant condition and that a plastic operation is advisable.

DR. PARKHURST: Unless the entire lesion is excised and studied serially, how can one be sure that no malignant condition is present? I agree that a plastic operation is needed, following complete excision.

NEW YORK ACADEMY OF MEDICINE, SECTION OF DERMATOLOGY AND SYPHILIS

RAY HOSKINS RULISON, M.D., *Secretary*

Regular Meeting, Dec. 4, 1928

ISADORE ROSEN, M.D., *Chairman*

A CASE FOR DIAGNOSIS (LICHEN PLANUS?). Presented by DR. GROSS.

Mrs. R. F., aged 40, born in Russia, was first admitted to the Vanderbilt Clinic on July 16, 1928, with a history of an itching eruption on the extremities, on the vulva and in the axillae of six weeks' duration. The eruption had first appeared on the hands and gradually spread to the forearms, the axillae and the lower part of the legs.

The patient's general health had been good except for hysterectomy and bilateral oophorectomy which had been performed two years previously for fibrosis and chronic salpingitis.

On July 16, examination of the extensor surfaces of both hands and flexor surfaces of the wrists showed pale erythematous papules which tended to become confluent thus forming shiny, slightly elevated lesions. In the axillae were circumscribed, erythematous, macerated patches with numerous small lesions extending to the side of the chest. On the thighs and lower parts of the legs were many yellowish-pink macules and papules with slight scaling. On the dorsal surfaces of the feet were numerous small papules; on the soles there was an extensive pinkish eruption with hyperkeratotic scales. On the tips of the great toes were moderate hyperkeratoses. On the mucous membranes of the cheeks opposite the third right molar was a network of fine whitish lesions. The vulva was erythematous and the membrane macerated.

The diagnostic impression at that time was lichen planus, though many of the lesions suggested psoriasis.

Course and Treatment.—On July 18, 1928, the urine showed 7 per cent dextrose. The patient was put on a diabetic diet. The urine became free from sugar, and on Nov. 9, 1928, the blood sugar was 1.24 Gm. per liter. The patient was given two injections of mercuric salicylarsenate of 2 cc. each, and also given Lassar's paste for the body, and Whitfield's ointment was prescribed for the hyperkeratotic lesions on the feet. No improvement was noted in the skin condition, but the character of the lesions on the forearms slowly changed until at the time of presentation the lateral surfaces of the forearms and the hands were dry and erythematous, and the skin was slightly infiltrated. The flexor surfaces of the forearms showed infiltrated plaques, varying in size from 5 to 10 cm. in diameter, which were erythematous, and nonscaly, some with normal skin in the center. Over the medial surface of the upper thighs were areas of about 13 by 4 cm. containing discrete plaques which were superficial and covered with micaceous scales. There was a similar linear area 8 by 3 cm. on the lateral surface of the right thigh. Over the rest of the legs were numerous faintly erythematous or yellowish nonscaly areas. Removal of micaceous scales from the newly formed lesions resulted in the appearance of minute bleeding points.

Biopsy.—The section showed moderate hyperkeratosis, acanthosis and spongiosis. The granular layer was not thickened. The epithelium showed scattered polymorphonuclears in the interstices between the cells. The corium superficially showed edema and an increased number of blood vessels, many of which were dilated, and numerous wandering cells of various types. The picture was of dermatitis rather than lichen planus or psoriasis.

DISCUSSION

DR. CANNON: I favor the diagnosis of psoriasis rather than that of lichen planus, chiefly because of the typical psoriasis-like lesions on the extensor surfaces of the thighs, the hyperkeratosis of the palms and beneath the edges of the nails. I believe that lichen planus gives the nail a yellow or white appearance with scaling beneath the nail but without scaling of the nail itself.

DR. HIGHMAN: Before a decision is reached as to the inevitability of this being one or the other of the two suggested diagnoses, I think that it might be well to suspend treatment for a few days and make studies as to the presence of parasites in the skin. The condition may be squamous dermatitis due to fungi, with secondary lichenification of the superficial type in possible trichophytosis. It looks little enough like lichen planus or psoriasis to make the foregoing hypothesis possible.

DR. ANDREWS: The lesions on the legs were lichenoid papules; there were also some on the wrists. The queer thing about the patient was that recently she developed a lesion on the thigh that looked like psoriasis. So far we are talking about two diseases of unknown cause. The woman has diabetes and a

dermatosis apparently related to diabetes. It is doubtful whether it should be classified further.

DR. FEIT: I treated two patients with psoriasis of the palms unsuccessfully with all kinds of remedies until I saw the cases of Dr. Throne in which the condition cleared up under treatment with sodium thiosulphate, given with the idea that heavy metals can produce lesions that cannot be distinguished from psoriasis. Some of the lesions here may have been caused in the same way. I would, therefore, suggest examination of the blood and the tissue for heavy metals.

DR. HIGHMAN: In spite of Dr. Andrew's skepticism and in view of the histologic report, it never does any harm to investigate a case for unsuspected conditions. A diabetic patient may be found who has ringworm.

DR. ROBINSON: This patient was examined for fungi last week and none was found.

DR. HIGHMAN: In spite of Dr. Andrew's skepticism and in view of the

DR. HOWARD FOX: The widely divergent view on this case shows what an interesting one it is. I am inclined to think that Dr. Andrew's statement is well worth considering, i. e., that the condition is a dermatosis having something to do with diabetes. I do not think it is lichen planus, and it certainly is not typical psoriasis. The patient had no lesions on the scalp and no characteristic nail changes (pitting or subungual hyperkeratosis).

DR. GROSS: The eruption improved greatly while the diabetic condition was being influenced successfully without local treatment. After the observations on the blood sugar became high normal, she developed the present larger psoriasis-like lesions. The possibility of psoriasis developing in a patient who had lichen planus is to be considered. It is possible that diabetes may have something to do with the eruption.

PERIFOLLICULITIS CAPITIS ABSCENDENS ET SUFFODIENS. Presented by DR. GROSS.

J. E. M., a man, aged 25, white, born in the United States, had been presented before this Section two years previously. Discrete pustular lesions developed in the occipital region about seven years prior to presentation. In about five years the entire scalp became involved.

DISCUSSION

DR. HOWARD FOX: Showing the great chronicity of some of these cases, I would like to quote a case of my own in which there was still some evidence of activity after the disease had existed for nearly forty years.

DR. BECHET: This is a typical example of the disease which apparently is appearing more frequently at our clinical meetings. If such is a fact, we should coin a more simple name for it, as its present one is inordinately long and a pompous exhibition of latinity.

DR. FRED WISE: In two cases reported in the literature, histologic examination revealed the structure of tuberculosis, but tubercle bacilli were not found, and results of cultural examinations and animal inoculations were negative. In this case, I do not believe that the administration of bromides bears any relationship to the condition of the scalp.

DR. GROSS: The patient has taken bromides, but I do not imply any relationship to bromides. As a matter of fact, he was taking phenobarbital alone for years when the eruption started.

DR. HIGHMAN: I had a case of this sort, and in addition to the lesions on the scalp, my patient had acne conglobata. The only treatment of benefit both as to the scalp and other lesions was surgical. Studies of all sorts, animal inoculations, anerobic cultures, investigations as to fungi, bacteria and still unheard of parasites, were made and resolved themselves into finding the staphylococcus. I think this is a disease indicating curious susceptibility to staphylococcus, and I think the indications are purely surgical.

DR. WOLF: In these cases an ideal state to be obtained is that produced by a permanent alopecia of the scalp. The patient referred to by Dr. Highman was treated by me at the suggestion of another physician in consultation. I was asked to produce a permanent alopecia of the scalp. I gave the patient three epilating doses at one sitting, and the result was a complete alopecia of the scalp with marked improvement of all lesions. That case was much more severe than the one presented here. The disease was quiescent for four months. After that period the hair began to regenerate with the result of reinfection and appearance of the same boggy masses.

DR. FEIT: We treated a patient with this identical condition at the Skin and Cancer Hospital. Every method was tried, also surgical intervention as suggested by Dr. Highman, without any improvement worth mentioning. Finally we treated the man with intradermal injections of a polyvalent vaccine consisting of staphylococcus, streptococcus and *Bacillus coli* directly into the lesions. Patients who had been overtreated with x-rays, Grenz ray or radium and still had active lesions yielded very well to this kind of treatment.

DR. HOPKINS: In the cultures made from this particular case we could obtain no staphylococcus.

DR. ELLER: In reference to Dr. Hopkins' remark, there was a case studied at the skin clinic of the New York Post-Graduate Hospital one year ago in which repeated smears were negative for all bacteria. Cultures showed staphylococci. The only treatment that helped was surgical. We tried enormous doses of the Grenz ray without improvement.

DR. GROSS. The patient has been treated by surgical measures for a long time, and some improvement resulted. We are starting now to combine the surgical treatment with the application of a 50 per cent alcoholic solution of zinc chloride, following a suggestion we found recently in the literature. The patient was epilated once with filtered x-rays but did not show marked improvement.

LICHEN ATROPHICUS. Presented by DR. FEIT.

A. S., a woman, aged 41, born in Poland, was first seen at the New York Skin and Cancer hospital complaining of an eruption which had started on the left side of the upper part of the chest as a whitish papule of eight months' duration. The papules had increased in number, forming patches of different sizes varying from that of a dime to that of a silver dollar, and were either round or polycyclic in outline; the papule was skin colored, slightly elevated above the normal skin, with a central depression. The patches were atrophic in the center and were surrounded by a red, slightly elevated border. A fresh patch had recently formed at the upper part of the right arm. The Wassermann reaction was negative. The blood sugar was 135; chlorides, 479.

DISCUSSION

DR. FRED WISE: There are two groups to be considered, the lichen planus sclerosus group and the scleroderma group.

DR. HIGHMAN: For my own information I would like to know what essential difference there is between all of these names, lichen planus atrophicus or lichen albus or lichen sclerosus, and all the others. What they all show histologically is at the margin a typical papule with central atrophy. It seems to me one of the most academic series of distinctions ever made in dermatology and utterly impracticable. I do not think there is any difference among the conditions.

DR. FRED WISE: The difference between lichen planus atrophicus and the other conditions which Dr. Highman mentioned lies chiefly in the histologic structure at certain stages during the evolution of the disease. In the end-stages the histology is the same, namely, that of sclerosis and atrophy. The microscopic changes in the atrophic and sclerotic lesions of lichen planus have been well

described and illustrated in one of Fordyce's publications on the lichens and in several of Ormsby's papers as well. The microscopic changes in white spot disease and scleroderma guttata are practically the same as those in ordinary scleroderma or morphea.

In this patient, the presence of large, elevated umbilicated, well defined papules points toward the diagnosis of lichen sclerosus.

DR. ROSTENBERG: We have all recently seen several of these cases called lichen sclerosus. Have any of the presenters seen any of these cases in conjunction with involvement of the mucous membrane? At present I have a patient, a woman, with lesions just like those shown here, but in addition, a very similar process on the vulva. I found only one similar case in the literature, reported in 1915 from San Francisco, where they claimed that these lesions were the initial lesions of kraurosis vulvae.

DR. HIGHMAN: It comes back to the question that I asked Dr. Wise. Any process, whatever its original nature, that ends in a white macular atrophy, I suppose can be classified as white spot disease. That variety not preceded by lichen planus, in the sense of Dr. Fordyce, I consider typical white spot disease; that is, localized scleroderma. I think lichen sclerosus and others, anything to which the term lichen can be applied, does not belong in the scleroderma group but in the lichen planus atrophicus group. The symptoms Dr. Wise described are characteristic of the simple lichen atrophicus whether it happens to turn white or not. The atrophy may have normal flesh color. I still maintain that I am as confused as I was before Dr. Wise's explanations, excepting on one point, i. e., white spots in the pure form are not lichen planus but morphea.

DR. FEIT: According to Darier all these different names mean the same disease, but some men do not agree with that and I think they are right. As Dr. Wise says, it all depends at what stage of the disease the biopsy is taken. In a similar case the biopsy showed a sclerotic band between the epidermis and the deeper cutis. I never saw in lichen planus anything of the kind. The woman presented here has a lesion on the right arm, which is only three days old and which we will use for a biopsy; it consists of a pinkish papule covered with hyperkeratotic scale. According to Gans, sclerosis and atrophy should be present in the same case, if lichen sclerosus is to be the diagnosis.

SUBCUTANEOUS NODULAR SYPHILODERM. Presented by DR. OLEYNICK.

Mrs. A. R., aged 27, white, born in Canada, whose husband showed the same lesions, had been married three years. There had been no miscarriages and no eruptions. She complained of severe nocturnal headache. Eighteen months before presentation, the patient had first noticed hard nodules which had appeared below her elbows; nodules on the knees and hands followed. The nodules varied in size from that of a pea to that of a cherry. The nodules were hard and freely movable except on the hands where they were adherent to the skin. There was no discoloration of the skin over the nodules. The results of Wassermann and Kahn tests of the blood were strongly positive. After eight injections of bismuth the headaches disappeared almost entirely, and the nodules began to diminish in size.

The patient's husband, A. R., aged 33, born in the United States, while in France in 1917, had had an erosion of the penis which had been diagnosed as chancroid and had been treated locally. The patient had not noticed any eruption of his body or swelling of the glands. The Wassermann reaction at that time, was, according to the patient's statement, repeatedly negative. Two years prior to presentation the patient noticed a hard nodule, the size of a cherry, below his right elbow; a nodule of the same size appeared later below one of his knees. Similar nodules, ranging from the size of a pea to that of a cherry, gradually appeared on his hands. They were all movable; some were, especially on the hands, adherent to the skin. The skin over the nodules was normal except on

the hands where there was a marked hyperkeratosis. The nodules were sensitive to pressure. The patient complained of pains in the joints.

The reactions to the Wassermann and Kahn tests were strongly positive. After eight injections of bismuth the pain in the nodules disappeared on pressure; the nodules on the hands became softer and reduced in size; some of them almost disappeared. The nodules on the elbows and knee did not undergo very marked changes. Both patients refused permission to excise a nodule.

The diagnosis was juxta-articular syphilitic nodules (Jeanselme).

DISCUSSION

DR. HOWARD FOX: I think that this is a classic example of the condition described by Parkes-Weber as chronic fibroid syphiloma. The most interesting feature of this case is the fact that the disease was present in both husband and wife. The lesions are sclerosing gummas histologically, and it is peculiar that they should usually be symmetrical as opposed to the usual rule of asymmetry in tertiary manifestations of the skin. In the first case recorded in this country by Goodman the title of the report was "an unusual syphilitic manifestation, resembling juxta-articular nodes." As I understand it, Dr. Goodman did not think these lesions had anything to do with the juxta-articular nodes described by Jeanselme as occurring in the far East. The lesions merely resembled these nodes.

DR. THORNLEY: One interesting point in this case is the fact that the man and women have been married only for about three years; so that if the diagnosis of tertiary syphilis is to stand, one must assume a much earlier appearance of that stage in the woman than in the man.

DR. ABRAMOWITZ: I am inclined to agree with the opinion of Dr. Howard Fox, that this is not a typical case of juxta-articular nodes, but rather a subcutaneous nodular syphiloma situated on areas subjected to trauma as in the stress of certain occupations. I believe these fibrotic gummas found in these locations can best be attributed to external environmental factors rather than a special type of spirochete.

DR. HIGHMAN: I have seen two cases of this disease in fourteen years. I reported the first at the clinical meeting of the American Medical Association, I believe, in New York in 1915. One patient was a printer who had numerous little masses of this sort on the palms and flexor surfaces of the fingers, which bears out Dr. Abramowitz' point of view. The other was a woman I am now treating who has a palmar syphilid of the tertiary type on the left hand, gummas over the flexor tendon in the right palm and one such lesion over the left olecranon. The palmar lesion had been called eczema, the palmar gumma a wen and the lesion on the elbow a healed fracture. If physicians continue to make such diagnoses, the condition will remain obscure.

DR. OLEYNICK: No sharp differentiation can be made, in my opinion, clinically or pathologically, between subcutaneous fibrous syphiloma and the juxta-articular nodes of Jeanselme; the term merely designates the location as being near the joints.

LYMPHOMA. Presented by DR. MCCAFFERTY.

L. E. W., a man, aged 62, born in the United States, an engraver, presented himself on Oct. 12, 1928, at which time he complained of numerous subcutaneous, painless tumors. He gave a history of having had enlarged cervical glands four years prior to presentation, at which time a diagnosis of Hodgkin's disease was made by Dr. Jackson of Paris, who referred the patient to a roentgen therapeutist for treatment. After a few roentgen treatments, the glands disappeared. One year before presentation, the patient had had a small tumor on the apex of the epiglottis; this had been removed en masse on May 21, 1928, by Dr. Imperatori and a section was made. The report of the histologic examination was lymphocytoma.

He consulted Dr. Shine, an ophthalmologist, because of subcutaneous tumors on the eyelids. One of these was removed without pathologic examination. On examination, the patient presented numerous subcutaneous nodules which were fairly firm on palpation; these nodules were present on the lower eyelids, the upper trunk and the upper extremities. He had a large mass of glands in the left supraclavicular fossa. There was a barely palpable gland in the left cervical region.

Blood counts which had been done some few months previously and also within the week prior to presentation were relatively normal. One of the subcutaneous nodules was removed from the region of the abdomen and the specimen prepared, examined and studied at the Vanderbilt Clinic; the report was lymphosarcoma or leukemia. The Wassermann reaction was negative.

DISCUSSION

DR. HOPKINS: The sections show a remarkably uniform infiltration with lymphoid cells. Among these are some extremely large cells with one or two nuclei. I have shown the sections to several pathologists who thought that the cells did not resemble those described by Sternberg-Reed in the tissue of Hodgkin's disease. The uniformity of the infiltration is also against that diagnosis. The lesion apparently belongs to the lymphoma group. It seems impossible to say whether it is a leukemic nodule or lymphosarcoma.

DR. HIGHMAN: Dr. McCafferty showed me the section, and my impression was identical with the one quoted by Dr. Hopkins. The uniformity of the cells almost rules out Hodgkin's disease. I think that the patient has lymphosarcomatosis.

DR. WOLF: Hodgkin's disease occurs unilaterally in the beginning and then has a greater tendency to affect other regional glands. Lymphosarcoma is generally unilateral, or a single lesion with slight tendency to metastasize. The lesion in this case resembled those in Hodgkin's disease. The lesion has recurred locally with metastases in various parts of the body. The nodule on the vocal cord was probably a Hodgkin's infiltration. Hodgkin's metastases occur in the brain, in the vertebrae and in the viscera. Lymphosarcoma is more sensitive to deep roentgen therapy than Hodgkin's disease. Metastases occur more frequently in Hodgkin's disease. I think this case is one of Hodgkin's disease.

DR. HIGHMAN: I do not think Dr. Wolf's discussion can be left unchallenged. Lymphosarcoma is as prone to metastasize and present a generalization of lesions as leukemia, Hodgkin's disease and mycosis fungoides. There are so many cases in the literature in which clinically such a diagnosis was made, the condition proving to be lymphosarcoma, that it is impossible to let Dr. Wolf's statement go on record without contradiction. The fact that the lesions are multiple and at unusual sites is in favor of lymphosarcoma rather than Hodgkin's disease.

ACRODERMATITIS CHRONICA ATROPHICANS. Presented by DR. ROSTENBERG.

The patient, aged 55, said that the eruption had started about twenty years prior to presentation. Both legs were involved, the right more so than the left. A diffuse bluish-red color and atrophy involved the entire skin over the lower third of both thighs and both legs, in which areas the underlying veins were prominent; the skin appeared velvety and soft to the touch. There were a number of scars on the lower extremities, the remainder of former ulcerations. On the region of the left right knee there were a great number of discrete, round and oval-shaped spots, the size of a pea, which on first glance resembled scars, but showed on closer inspection that they consisted of soft redundant tissue, where the skin showed cigaret-paper wrinkling.

GRANULOMA INGUINALE. Presented by DR. ANDREWS.

J. H., a man, colored, aged 37, born in the United States, a janitor, was brought to the Vanderbilt Clinic by Dr. Rostenberg. He said that in 1923, while in

Charleston, S. C., he had developed a sore on the left side of the anus; this had healed after two injections into the arm vein but a relapse soon followed. The lesion had gradually extended, until in 1926, it had formed a large mass surrounding the anus and had extended forward into the right groin. The pain was severe, interfering with sleep and making it impossible for him to sit down with comfort. From 1926 to 1928, he was treated in various clinics with arsphenamine without improvement. In 1924, the sores broke out on the legs; these healed after application of a black salve. In 1926, the patient developed a swollen gland in the right side of the neck which was incised and drained. There was no history of tuberculosis or syphilis.

On admission on Sept. 27, 1928, the patient presented a stony hard raised lesion in the left groin extending under the perineum and up on both sides of the anus. Here it formed two palm-sized masses, raised 2 cm. above the surrounding skin. The surface was superficially ulcerated and exuded a thin, foul-smelling discharge. After six injections of antimony potassium tartrate (tartar emetie), pain was relieved and the ulceration healed. The last injection was on October 29.

Slide for Donovan bodies was negative. Section showed granulation tissue with foci of plasma cell infiltration. The Wassermann reaction on Oct. 3, 1928, was negative.

DISCUSSION

DR. TULIPAN: How many slides were prepared in looking for Donovan bodies? At the last meeting of the American Medical Association slides were shown, and the presenter claimed it was necessary to examine on an average of from fifty to sixty slides before the bodies were found.

DR. SHARLIT: If we are to abide by the judgment of the demonstrator at the scientific exhibit of the last convention of the American Medical Association, Donovan bodies may regularly be demonstrated from the tissue smears in cases of granuloma inguinale. We, here, are repeatedly being presented with cases diagnosed as granuloma inguinale, such presentations consistently being accompanied by the statement that smears for Donovan bodies proved negative. Are we in New York lacking in the technical skill for demonstrating the bodies?

DR. HOWARD FOX: I would like to ask whether the search for Donovan bodies was made after antimony potassium tartrate had been given, as in such a case it is more difficult to find them. I would also like to know whether the search for organisms was made by making smears from the deeper tissue such as the under surface of tissue excised for histologic examination.

DR. HOPKINS: We have had no success in finding Donovan bodies in cases of suspected granuloma inguinale. I do not believe that our negative examination rules out that diagnosis.

DR. ANDREWS: The diagnosis seems to be accepted. The patient has improved under rather specific treatment. Examination for Donovan bodies was made very thoroughly.

TINEA BARBAE (TREATED WITH TRICHOPHYTIN). Presented by DR. HOPKINS.

H. E., a man, aged 33, white, a candy maker, born in Germany, entered the Vanderbilt Clinic eight weeks before presentation with an infection of the beard of three months' duration.

Examination at that time showed the right third of the bearded area of the face and neck moderately inflamed and swollen. Deep boggy nodules, which exuded thick purulent material on slight pressure, were scattered over this area. There was a marked folliculitis and perifolliculitis. Many of the broken off hairs protruded from the peaks of small pustules. On the upper lip, chin, and neck were discrete areas of pustular folliculitis.

With Wood's filter the involved areas fluoresced brilliantly giving off a greenish light; the hairs stood out like small electric sparks. Direct examination showed numerous ectothrix spores and mycelia. Culture of hair on Sabouraud's

mediums showed typical *Trichophyton rosaceum*. The intradermal trichophytin diagnostic test was markedly positive. Cultures of the blood taken twenty-four and forty-eight hours after one-half skin unit of filtered roentgen ray were negative. The patient received one-half skin unit doses of unfiltered and of filtered roentgen ray to the right third of the bearded area of the face and neck. The last dose was given five weeks before presentation. Wet dressings of acriflavine and later a 3 per cent solution of tincture of iodine were applied locally. For the previous seven weeks the patient had received injections of trichophytin in ascending doses, the interval and amount depending on the subsidence of the previous local and general reaction. No trichophytid developed during the eight weeks' observation. The lesions showed consistent improvement, the areas finally healing. The right side of the face was somewhat reddened, epilated, and there was a slight tendency toward hypertrophic scar formation. Attempts to cutaneously reinoculate (scarification and intradermal) the patient with his fungus, five and three weeks previous to being shown, failed.

DISCUSSION

DR. HOWARD FOX: I would like to call attention to the fact that most cases of deep-seated lumpy type of ringworm of the beard are situated for the most part in the region below a line between the point of the chin and angle of the jaw. Why this is so, I do not know. The present case is an exception to this rule.

DR. ABRAMOWITZ: Dermatologists in France are getting much better results than we have had up to the present time with x-rays and the injection of trichophytin and with intravenous injections of a modified compound solution of iodine.

DR. FEIT: I was wondering why tinea barbae is so rare in this country. It is rather common in Germany, and the cases I have seen here were all German patients. Perhaps there are more cases but they are not being encountered.

LICHEN NITIDUS. Presented by DR. ROBINSON.

B. A., a boy, aged 13, white, born in the United States, entered the Vanderbilt Clinic on Oct. 2, 1928, complaining of an eruption of ten months' duration. The lesions first appeared on the forearms, and later on the abdomen and penis.

Examination of the lower two thirds of the anterior trunk, especially in the midline, the postaxillary folds, the forearms (flexor surfaces and extensors especially about the elbows) and the penis showed disseminated, discrete, lichenoid papules about 1 mm. in diameter—lesions which were flat topped and shiny. The cervical lymph glands were slightly enlarged, discrete and firm. Other glands were not palpable.

Biopsy.—Biopsy of a lichenoid lesion on the flexor surface of the right forearm showed a well circumscribed cellular infiltration in the papillum surrounded by two rete pegs. The epidermis above this infiltration was markedly atrophic. The cellular infiltration was composed mainly of lymphocytes and epithelioid cells. There was no tendency toward caseation.

Course.—On October 9, 17 and 24 the patient received 0.015 mg. 4 amino-2 auro thiophenol carbonic acid. Since that time he had given himself ultraviolet light treatments almost daily. There had been a regression in the lesions. The results of an intradermal tuberculin test on November 28 was positive.

DISCUSSION

DR. ROBINSON: This is a case of lichen nitidus. I was interested principally in treatment. Small doses of amino-auro thiophenol carbonic acid were given, apparently with distinct improvement in the lesions.

DR. HOWARD FOX: It is on record that one of the cases reported by Dr. Trimble and Dr. Maloney (one a patient of mine) showed marked improvement under roentgen treatment.

SYPHILITIC GLOSSITIS. Presented by DR. L. CHARGIN.

Mrs. A. E., aged 66, married, a housewife, said that soon after marriage, more than forty years previously, she had developed a generalized eruption which had persisted for some time. There was no definite history of antisyphilitic treatment. She had first been seen at the clinic about eight months prior to the present examination with an eruption on the sole of her left foot which was recognized as a late syphilitic manifestation. The general examination at that time disclosed a parenchymatous sclerosing syphilitic process of the tongue. The patient had been a smoker for more than twenty-five years. The Wassermann reaction was 4 plus.

Under treatment consisting of injections of neoarsphenamine and bismuth the eruption on the foot had entirely disappeared, and the infiltration of the tongue had improved to a considerable extent, leaving the typical end-stage of parenchymatous sclerosis of the tongue consisting of atrophy, hypertrophic areas and leukoplakia.

EXTRA MAMMARY PAGET'S DISEASE OF THE FACE. Presented by DR. CORNELL.

H. C., aged 41, born in the British West Indies, a housewife, came to the skin clinic of the New York Post-Graduate Hospital on Nov. 30, 1928, stating that ten years prior to presentation a sore had appeared on her right cheek, which had gradually spread and grown larger.

On examination there was an irregular, sharply defined, slightly raised lesion on the lower right cheek about 6 by 4 cm. The lesion was erythematous and slightly crusted with exudation in spots. There was a distinct infiltrated and raised border. The lesion had been treated with various ointments. No apple-jelly nodules were visible. There was a definite scaly erythematous patch on the left ear. The Wassermann reaction was negative.

Tissue was removed from the region of the right zygomatic arch. Microscopic examination showed that the epidermis for the greater part was markedly acanthotic. Beneath this epidermis there was a moderate inflammatory reaction; the vessels were markedly dilated and there was a cellular infiltration composed of lymphocytes and plasma cells. There was some basophilic degeneration of the connective tissue just beneath the epidermis. The basal portion of the acanthotic epidermis was almost unaltered. There were a few irregular sized cavities. The epidermic cells were increased in size; there were a considerable number of mitotic figures present. The diagnosis was Paget's disease of the skin in a very early stage.

DR. ANDREWS: I would like to know if by intra-epidermal epithelioma is specifically meant Bowen's disease, or does it refer to other types of superficial epithelioma?

DR. FRASER: The pathologic cells which constitute the intra-epidermal lesion of Bowen's dermatosis resemble the prickle cell type and show evidence of differentiation. The cells in the Jadassohn type of intra-epidermal epithelioma resemble more the basal cell type and do not show differentiation.

I disagree with the diagnosis of Paget's disease. The disease described by Paget was a disease of the nipple, and modern pathologists are inclined to the view that the lesion is secondary in the epidermis to a cancer of the lactiferous ducts. If this view is correct, and I believe it is, such an entity as extramammary Paget's disease is inconceivable, unless one postulates the existence of supernumerary nipples or an epidermal lesion secondary to a cancer arising in the sweat ducts.

I examined the slide hurriedy, and my opinion is that the case should be recorded as an intra-epidermal epithelioma of the type described by Jadassohn.

DR. WISE: I think it is agreed among men who have made a study of this subject, including Pautrier and a good many other writers in Europe, as well as in this country, that the clinical diagnosis of extramammary Paget's disease must be made with circumspection and caution. Many investigators believe that such a

disease does not exist. The histologic section in this case must, to my mind, be studied for a considerable period of time before one can come to any definite conclusion. A brief glance at the section does not suffice; I would like to take the slide home and study it carefully. However, the diagnosis of extramammary Paget's disease has been made by experts; I discussed the subject with Bruno Bloch on his recent visit here, and he told me he had examined lesions resembling the one in this patient, occurring on various parts of the trunk exclusive of the nipples, in which the histology was that of Paget's disease. I do not believe from the cursory glance bestowed by most of us on the slide, that Paget's cells have been satisfactorily demonstrated, and I agree with Dr. Fraser that we are probably dealing with a superficial type of epithelioma, rather than extramammary Paget's disease.

ONYCHOMYCOSIS. Presented by DR. HOPKINS.

Mrs. M. F., aged 30, born in Austria, a housewife, was admitted to the Vanderbilt Clinic on Nov. 21, 1928, with an infection of the nails of the fingers and toes of five years' duration. The nails of the right and left third fingers were first affected, the disease gradually spreading to all the nails of the fingers and toes.

Examination on Nov. 21, 1928, showed all the nails to be convex, hypertrophic and discolored and barred with transverse ridges. The borders of the nails were normal. There was slight hypertrophy of the paronychium but no inflammation. The toe-nails on the great toes were about one half of the normal length and twice the normal thickness and yellow. The entire horny layer was honey-comb in appearance. The surrounding skin was normal.

Direct slide scrapings from the finger nails showed no mycelia or spores. Slide from the toe-nails showed profuse mycelium. Cultures from positive scrapings planted on Sabouraud's medium showed no growth. Examination of the sputum showed no *Monilia*.

DISCUSSION

DR. ABRAMOWITZ: I am willing to accept the observations of fungi in the lesions of the toe-nail, as the clinical appearance coincides with the diagnosis of tinea of the nails. The usual crumbling and brittleness of the nails are absent in the finger-nails. Instead, all the nails are thickened and pearly, showing numerous striations and paronychial thickening. The patient shows a scar on her neck from an adenitis she had when she was young; she had had bronchitis for seven years. I believe it is possible for her systemic disturbance to cause such lesions of her finger-nails, and I would advise further study in that direction to exclude an ordinary dystrophy of the finger-nails.

DR. HOWARD FOX: The patient told me that I had previously seen her and had made an examination of the finger-nails for fungus. She said the examination showed no fungus.

DR. HOPKINS: I am very much interested in Dr. Abramowitz' suggestion. I think that we have to bear in mind that finding mycelium in the nail does not necessarily mean that the lesion is due to infection with fungus. As our cultures were negative we were unable to prove that the fungus present was of a pathogenic species. We know only that there was some fungus growing in the dead nail tissue of the toes; on the other hand, the toe-nails had clinically the appearance of an onychomycosis. As it is always safer to try to make one diagnosis cover the various lesions in the case, I am inclined to believe that the condition of the finger-nails is also a trichophytosis.

SYPHILIS? BROMODERMA? Presented by DR. HOPKINS.

Mrs. A. D., aged 51, white, born in the United States, was referred to the Vanderbilt Clinic on Nov. 20, 1928, for diagnosis of a lesion on the lower part of the left leg. She gave the history that about two months prior to presentation a small blister had appeared in the center of the lower part of the left leg, which soon became an ulcer. She received six intravenous injections of

neoarsphenamine, six intramuscular injections of mercury and twenty drops of potassium iodide daily. This medication had had no beneficial influence on the lesions. There was a history of several other lesions which had disappeared. One year before presentation she had received two courses consisting of eight injections of neoarsphenamine, intravenously, and eight injections of mercury intramuscularly; with this treatment and ultraviolet light the ulcer on the leg almost healed. Two Wassermann tests were negative, although a previous test was said to have been positive. She had had three normal pregnancies. One pregnancy resulted in a still birth at nine months. Her general health was not good. She had suffered from intense headaches, nervousness, loss of memory and insomnia. She had taken bromoseltzer daily for five years for the relief of headaches and insomnia.

Examination of the lower third of the left leg showed an inflammatory area about 10 cm. in diameter, which almost surrounded the leg. The center of this area for a diameter of about 2 cm. varied from dull red to gray and was atrophic. Surrounding this, and especially dense on the medial surface for about 3 cm., the leg was covered with a rather sharply-outlined honey-combed, firmly adherent grayish-brown excrescence. On closer observation this was made up of minute brownish points. From the lower outer quadrant of this excrescence, pus could be expressed. Surrounding this zone was a hypertrophic reddish-blue area of about 2 cm, and surrounding this, an area of inflammation of about 3 cm. At the junction of the middle and lower third of the anterior part of the right leg was a sluggish ulcer about 3 cm. in diameter. There were two minute anal fistulas.

Results of the Wassermann and Kahn tests on Nov. 20, 1928, were negative. The urine was examined for bromide before and twenty-four hours after injection of 50 cc. of a physiologic solution of sodium chloride intravenously and was negative on both occasions. A sample of the commercial bromoseltzer and the patient's urine after intravenous injections of saline were tested both electrolytically and chemically for bromine and inorganic bromides, and none was found.

DISCUSSION

DR. HOWARD FOX: The fact that this patient had taken bromoseltzer should be incorporated in the report of the case. The public should know that this patent remedy is not entirely harmless. A case of bromoderma following the use of bromoseltzer was reported by Waugh, and I have presented two such cases before another society in New York. In one of my cases, the drug had been taken in this form for ten years, and lesions had been present for four years.

DR. HOPKINS: We felt rather confident when we found that this patient had been taking bromoseltzer that we had found the etiology of the case. We have been unable, however, to find bromine in the urine either before or after injections of sodium chloride.

DR. MCCAFFERTY: I desire to concur with the diagnosis of bromoderma. There is strong presumptive evidence, in my opinion, that the lesions have occurred from the continuous ingestion of bromoseltzer unless it is later proved that bromoseltzer does not contain any form of bromide.

DR. FRED WISE: My diagnosis is bromoderma.

DR. CANNON: I think that the case is characteristic of bromoderma. I recall having three patients with lesions simulating bromoderma. Each one gave a history of taking bromoseltzer. I was always under the impression that bromoseltzer contained bromides.

DR. ELLER: I think that this is a typical case of bromide eruption. About two years ago I made an inquiry about the contents of bromoseltzer and was told there were two types, one containing bromides and one that did not.

SYCOSIS VULGARIS TREATED WITH GRENZ RAYS. Presented by DR. FEIT.

G. V., a man, aged 27, born in Germany, gave the history of an eruption of the face of ten years' duration. The patient had been treated with the ultraviolet

ray and with injections of vaccine after which the lesions disappeared for about three months. He was later given four fractional doses of roentgen rays, which treatment checked the condition for a period of two years (1925 to 1927). On May 28, 1928, the patient went to the Post-Graduate Hospital where he received ten exposures of Grenz rays to each cheek, which made the condition worse, according to the patient's opinion. At the time of presentation practically the entire face was involved with follicular pustules on an erythematous infiltrated base. There was slight wrinkling.

PARAPSORIASIS EN PLAQUES. Presented by DR. FEIT.

J. I., a man, aged 31, born in Italy, and who had been in the United States, sixteen years, said that lesions had been present for eight years, and were scattered over the body. The patient was syphilitic and had received intensive antisyphilitic treatment. The last Wassermann test was reported in October, 1928, as one plus. The eruption for which he was presented had started back of the left leg as a yellowish-red, slightly scaly patch. There was no particular sensation in these patches. They never completely disappeared but faded a little in the summer. New patches formed continuously. These patches were not sharply defined and were of different size and shape. The patient showed a port wine mark on the left side of the face.

Physical examination showed no evidence of tuberculosis. The patient received about forty treatments with ultraviolet rays and eight injections of pilocarpine which were well sustained, especially since the sweat excretion was not increased thereby. There had been little, if any, improvement.

GLUTEAL CHANCRE. Presented by DR. PAROUNAGIAN.

J. S., a man, aged 21, who had been exposed about three months prior to presentation, noticed a sore on the left gluteal region about two or three weeks after this occurrence. When admitted to the Bellevue Hospital Syphilis Clinic on the afternoon of presentation (Dec. 4, 1928), the examination revealed a large, indurated chancre, a few moist papules on the genitals, a generalized maculo-papular roseola, marked adenopathy particularly below Poupart's ligament and mucous patches in the mouth.

ACNE VARIOLIFORMIS. Presented by DR. CHARGIN.

M. W., a man, aged 31, married, a salesman, said that his condition had first appeared about ten years prior to presentation at which time the lesions were mostly confined to the cheeks and the neck. The attacks came and went but more recently the condition had become aggravated, the lesions being more persistent, more numerous, larger and more inflammatory. New lesions had appeared while old ones regressed. The eruption was practically continuous but was less marked at times.

At the time of presentation the patient showed a great many active lesions at the hair-border, on the forehead, the cheeks and the scalp and above and behind the ears. The lesions were in various stages of evolution and involution. There were many typical scars in the aforementioned locations, and remains of old healed lesions. He complained of some itching. A variety of treatments had been given, including ammoniated mercury ointment, cinnabar-sulphur ointment, arsphenamine, ultraviolet rays and internal administration of tonics, all with indifferent success.

LICHEN PLANUS AND LICHEN SPINULOSUS. Presented by DR. MCCAFFERTY.

C. H. W., a man, aged 43, a carpenter, born in the United States, was first seen in the Vanderbilt Clinic on Nov. 27, 1928, at which time he complained of an eruption involving both forearms and legs. He gave a history of having had a similar eruption eighteen years previously which had involved the abdomen as

well as the aforementioned locations. This eruption had cleared up in a short time, and he had remained free from it for seven years, at which time he developed a recurrence on the forearms only. He also gave a history of having had an eruption on the penis, but when seen on his first visit at the Vanderbilt Clinic no eruption was noted in that location.

Examination showed scattered over the flexor surfaces of the forearms a mixed type of eruption, consisting of bluish-red, polygonal, shiny papules some of which were discrete and others confluent. A few of these papules had a central depression. In addition to these lesions there were numerous follicular keratotic plugs, most of which were pierced by hairs and arranged in small patches. In the mouth on both buccal mucosae was a retiform eruption which was bluish-white and appeared to be made up of numerous minute papules. Lesions similar to those on the forearms were noted over both shins.

LYMPHANGIOMA CIRCUMSCRIPTUM. Presented by DR. ANDREWS.

S. S., a school girl, aged 13, from the Vanderbilt Clinic, gave a history that since birth she had had a group of papules just above the right breast. Ten years before presentation she had fallen, striking the right breast; this was followed by a black and blue mark. Soon after, a lump appeared in the outer upper part of the right breast; this slowly increased in size until one year prior to presentation it had reached 5 cm. in diameter. At this time it was excised. The pathologic examination of the excised mass was as follows: Grossly, a round irregular piece of tissue covered with adipose tissue on one side and on the other side, firm and dark purple. On section, the mass was found to be a cyst, purplish gray at its periphery and yellowish white on its inner surface. The cyst was filled with red blood-like material. Microscopic section showed the cyst lined with mesoblastic cells, with no evidence of breast tissue. There were some phagocytic cells at one point which contained old blood pigment. The diagnosis was an old hematoma.

Examination showed about a dozen lesions just above the right mammary gland reaching from the midclavicular to the anterior axillary line. Some of them were distinct opalescent vesicles while others were brownish and appeared verrucous. They varied in size from 1 mm. to 1 cm. in diameter, were raised, globular and with slightly irregular outlines. A few of the lesions were isolated but with a tendency toward grouping. Two of the opalescent vesicles were contiguous and surrounded by similar minute satellites. There was no telangiectasis. There was a scar just below the lesions (the site of the aforementioned excision) which contained a small cystlike mass about 2 cm. in diameter.

LINGUA GEOGRAPHICA. Presented by DR. CANNON.

J. B., a white man, aged 33 years, was referred to the Vanderbilt Clinic two weeks previous to presentation for ulceration of the left anterior fauces, of three week's duration. The history showed that seventeen months previously the patient had had a chancre, that the Wassermann test was positive and that he had received a course of intramuscular and intravenous injections. During that time his mouth became sore, salivation increased, but no ulceration developed. A few weeks following this course, the symptoms disappeared. With the resumption of the intramuscular injections just prior to presentation the mouth and throat became sore, salivation again increased and the ulceration appeared in the throat.

Two weeks before presentation examination on admission showed the tongue to be slightly swollen and tender, and superficial exfoliation with geographical configuration along the left outer third and along the left border. The left anterior pillar of the fauces showed the entire pillar covered with an elongated slightly oval ulceration, which was moderately superficial, and covered with a grayish, adherent moist membrane. The edges of the ulceration appeared inflamed. There was no induration. The teeth were discolored, but there was no inflammation about the apexes.

MINNESOTA DERMATOLOGICAL SOCIETY

D. D. TURNACLIFF, M.D., *Secretary*

Dec. 5, 1928

W. H. GOECKERMAN, M.D., *President, Presiding*

SCLERODERMA CIRCUMSCRIPTUM. Presented by DR. GAGER.

A woman, aged 39, presented a scleroderma in the form of a band from the thigh to the knee on the outer aspect of the left leg. This band varied from 5 to 10 cm. in width. The surface of the lesion was smooth and white; the veins were well marked through the atrophic skin. There was no elevation over the surrounding skin. The area was firm and boardlike to the touch. The duration of the lesion was one and one-half years. The condition began as a small area over the thigh and gradually spread downward. The Wassermann reaction was negative.

SCLERODERMA WITH ATROPHY. Presented by DR. GAGER.

A woman, aged 40, presented areas of scleroderma with atrophy involving the calves of both legs from the knees to the instep. The calves of the legs were firm and boardlike; it seemed as though there might be involvement of the calf muscles. On the elbows and over the back of one hand there were large areas of atrophy. The skin over these regions was thin and bright red. The condition began more than twenty years before presentation and spread rapidly to its present extent. There had been no extension for twenty years. At the time of presentation there was some swelling of the ankles due to interference with the circulation.

DISCUSSION

DR. GAGER: These two cases might well be considered together. There is no question but that the first patient has a circumscribed scleroderma. When I first saw her about four months ago, she said that the lesion was of one and a half years' duration. At that time the lesion was hard; it was elevated over the surrounding skin, and was bluish-white and firm to the touch. The edge could be felt, and it had a pinkish border. The lesion is smaller now, the infiltration has gone down considerably and there is definite improvement over the appearance on her first visit. This, I believe, has been the result of the administration of thyroid extract plus iodine ointment and heat. The lamp has been applied regularly. It looks as though the lesion would not progress farther.

The second case, I believe, is also one of scleroderma with much more atrophy. The interesting part of this case is that the patient has had these lesions (all of them) for a period of twenty years, and says she does not believe that they have changed much since the onset. Her difficulty now I think is that she has some eczema of the lower extremities due to varicose veins. She will do very well if she does not have trouble with the circulation of the lower extremities. At the time I first saw her, I was somewhat alarmed that she might develop ulcers about the ankle.

DR. FREEMAN: I thought that the first case was one of scleroderma in the atrophic stage. The other case is also one of scleroderma. I do not believe that a person the age of this patient would have acrodermatitis.

DR. MICHELSON: I accept the diagnosis of scleroderma in the first case, but I do not think that the condition in the second case is scleroderma. It has all of the characteristics of acrodermatitis chronica atrophicans. The symmetry of the lesions, the marked involvement of the elbow and the ulnar streak, the extreme thinness of the atrophic areas and the color, all point to that diagnosis. The hard areas on the leg have been noted before in this condition, and the age of onset, although early, has also been recorded in the literature.

DR. SWEITZER: I am inclined to believe that both conditions are scleroderma. The fact that the second patient has definite atrophy on the back of the left hand and none on the right hand does not point to acrodermatitis. The one patient has hard lesions on both legs, and on the backs of the legs she has calcareous nodules. I think that the lesions are like those seen in cases of varicose veins. I believe that she has two conditions at the same time.

DR. BUTLER: I thought that the condition in both cases was scleroderma. I do not believe that it is idiopathic atrophy of the skin.

DR. O'LEARY: I should group the second case in the idiopathic atrophies. The atrophy of idiopathic atrophy and the atrophy of scleroderma should not be confused. Several years ago Wise called attention to the distinction between these entities, which I believe is well defined. Scleroderma is a sclerosing disease, even to the point of atrophy, while the atrophy of idiopathic atrophy is of the soft cigaret-paper type. The confusing features in this case are the calcareous-like deposits on the backs of the legs. Roentgen examination of the legs would help settle the question as to the character of these lesions. Calcareous deposits, either diffuse or circumscribed, are not uncommon in the well established types of scleroderma.

DR. GAGER: The hardness in the calves of the legs will have to be explained on the basis of some condition other than idiopathic atrophy. The other patients I have seen have not had this. I shall take x-ray pictures of the limbs.

SYPHILIS OF THE LYMPHATICS. Presented by DR. GAGER.

A man, about 40 years of age, in July, 1926, consulted the Ancker Hospital Clinic for stiffness and lameness resulting from his work at a foundry. There was no history of chancre, but the Wassermann reaction was found to be 4 plus. The Wassermann reactions have been as follows: July 20, 1926, positive; May 31, 1927, negative, with a positive Kahn reaction, and Oct. 16, 1928, negative, with a positive Kahn reaction. He had received the following treatment: from July 27 to Sept. 7, 1926, six injections of neoarsphenamine, 0.6 Gm.; from Jan. 4 to April 19, 1927, seven injections of neoarsphenamine, 0.6 Gm.; from Nov. 16, 1928, to the time of presentation, five injections of neoarsphenamine, 0.6 Gm, and from Sept. 14 to Dec. 21, 1926, eight injections of bismuth salicylate, 1½ grains (0.09 Gm.). He stopped treatment on April 19, 1927, and returned to the Wilder Clinic in November, 1928. He presented a marked general adenopathy of the entire system. There was a large mass of glands on the left side of the neck. The individual glands could be seen and felt like a large cluster of grapes, and were as large as walnuts or even a small egg. The whole cervical chain was involved. There was no pain. The glands had been enlarged for the past eight months. The man had lost some weight during that time.

Examination of the blood was negative; it showed: white cell count, 8,450; differential polymorphonuclears, 65 per cent and lymphocytes, 35 per cent. The red blood cells were normal. A biopsy will be done to confirm the diagnosis.

DISCUSSION

DR. BUTLER: Do you regard the glands as of syphilitic origin?

DR. GAGER: I am inclined to think that the man has marked syphilis.

DR. BUTLER: I should certainly not consider these glands syphilitic. I think that we should consider a diagnosis of beginning Hodgkin's disease or lymphosarcoma. With all due respect to the Wassermann reaction, I think that the glands are not syphilitic.

ECZEMA PREMYCOTICUM. Presented by DR. GAGER.

A woman, aged 35, in January, 1927, had a generalized eruption. This was described as a vesicular or bullous eruption and was diagnosed as pemphigus. The eruption healed after several months. During the past year, the patient developed an acute or subacute eczema on various parts of the body, with burning and itch-

ing symptoms. At the time of presentation there were areas of a scaling eczema on various parts of the body, buttocks, abdomen, arms and legs. These were erythematous, slightly scaling, eczematoid lesions of a fungaceous nature. No treatment was of avail except roentgen irradiation in one-fourth skin unit doses, which seemed to cause rapid subsidence of the lesions.

This case might be one of parapsoriasis, and while it is too early to make an absolute diagnosis of mycosis fungoides, I present the case as one of mycosis fungoides in the early eczematous stage.

DISCUSSION

DR. GAGER: This patient came to me in March, 1928, and since then has had the condition in about its present degree, although five months ago it was much better. Some of the lesions have disappeared and new ones have developed. The sharply marginated lesion on the buttock and the one on the abdomen were not present when I first examined her, and have appeared lately.

DR. MICHELSON: I cannot go so far as to make a diagnosis of premycotic eczema. The case to me is one of disseminated lichen chronicus simplex, for which roentgen therapy has been applied.

DR. BUTLER: Some of the lesions on the leg and on the outer side of the ankle, which showed the silvery scaling, suggested psoriasis. If one looked only at the lesions on the ankle, they are almost typical of psoriasis.

DR. SWEITZER: There is evidence of psoriasis in the lesion on the ankle and also in that on the abdomen. I questioned the patient as to itching, and she said that there was very little. I saw no sign that the lesions had been scratched. One feature must be borne in mind; that is, there are cases of psoriasis which continue for years and eventually turn out to be mycosis.

DR. O'LEARY: I agree with the presumptive diagnosis of premycotic mycosis fungoides. A microscopic study from one of the thickened plaques might make the diagnosis conclusive. Itching is not always an essential feature of this phase of the disease. A physician whom we had under our care some years with lesions in the fungating stage had premycotic manifestations for twenty years with no itching. The diagnosis was made by a number of competent observers. I believe that this patient will eventually develop more classic signs of mycosis fungoides.

PITYRIASIS ROSACEA (Long Duration). Presented by DR. TURNACLIFF.

A man, aged 32, had been under treatment for two years for syphilis, which originated in 1918. During this time he had not had any active skin lesions of syphilis. He was given the last treatment on May 10, 1928. In July, 1928, two oblong plaques appeared on the right side of the body. The borders were raised and scaly, while the center of the lesions was slightly reddened. Four more lesions appeared on the back and sides, which were definitely elongated in the lines of cleavage. A diagnosis of pityriasis rosacea was made at that time. Palliative treatment was used for one month, when there many similar new lesions. Trichophyton corporis of superficial type was considered and Whitfield's ointment and tincture of iodine had been used with some recession of the lesions, but all of the original lesions remained and many had gradually increased in size so that at the time of presentation the lesions varied from 1 to 5 cm. across, and were present over the body, arm and legs.

The presenter thought that the diagnosis rested between a prolonged pityriasis rosacea and trichophyton corporis.

DISCUSSION

DR. ARMSTRONG: If you had not said that the man had syphilis I should never have thought of such a diagnosis. If he was treated for syphilis, the condition should have cleared up. If it is a mycotic condition, it should clear up readily under almost any treatment.

DR. GAGER: It is possible that the patient may have pityriasis rosea, but I have never seen a case of pityriasis continue for that long, although I have seen them last from eight to ten weeks. He has the annular lesions comparable with pityriasis rosea.

DR. BUTLER: The distribution of the lesions would suggest pityriasis rosea. They are annular, oval and conform pretty much to the cleavage lines of the skin, but there are infiltrated lesions on the border which would outrule the diagnosis of pityriasis rosea. The borders are densely infiltrated. This suggests recurring syphilis, a recurring annular configured eruption occasionally observed in untreated or inadequately treated patients with syphilis.

DR. SWEITZER: I should like to call attention to the fact that the ordinary "book" pityriasis is not the only type one encounters. That pityriasis will heal itself in eight or ten weeks is not always true. There are several different types: the ordinary scaling type, the papular type and the giant type with considerable induration. There are a number of cases of pityriasis rosea that will last for months. A good method of treatment is with the lamp. Washing seems to make the disease continue. In addition to the lamp, a 5 per cent salicylic alcohol should be used. I have had several patients in whom the condition has persisted for five or six months, and whom I cured quickly with the lamp. I could not see any atrophy in this case.

DR. MICHELSON: I agree with Dr. Sweitzer. Some cases of pityriasis rosea may last for a long time if no scaling treatment is used. Professor Jadassohn mentions this in his notes on Darier's edition, page 65.

DR. FREEMAN: I think that this condition is more like pityriasis rosea. Dr. Butler's suggestion of syphilis can easily be solved or disproved with therapy.

DR. O'LEARY: I, too, think that this patient has pityriasis rosea. In the differential diagnosis I considered recurrent syphilid and a dermatitis medicamentosa, from the use of either bismuth or phenolphthalein. The patient says that he has used bismuth and not infrequently takes a laxative containing phenolphthalein. Exudative lesions of this type have been observed following the injection of phenolphthalein.

DR. TURNACLIFF: These lesions started in July, 1928. The syphilis originated when the patient was in the army in 1917, but I did not consider it important enough in the diagnosis to have it mentioned in the history. He finished treatment with bismuth in May, and came back during the summer with the condition which I diagnosed as pityriasis rosea. He had treatment with Whitfield's ointment on the lesions until Monday night. He improves each time with doses of the ointment. He has also had eight treatments with bismuth in the past two months.

DR. GAGER: I once saw a case of exfoliative dermatitis and the only treatment the patient ever had was the administration of bismuth salicylate.

A CASE FOR DIAGNOSIS (Hydroa Aestivale?). Presented by DR. KLEIN.

A boy, aged 9, was presented because of numerous discrete pustular lesions on the face, forehead and ears. There was no pertinent history of undue exposure to sunlight. The lesions were crusted with heavy yellow brown deposits. There was considerable edema of the entire face. There was also marked inflammation of the left eye. This was apparently confined to the conjunctiva and sclera. No test for hematoporphyrin had been made. The boy had a similar attack some months before presentation, which had responded to mild antiseptic ointments.

DISCUSSION

DR. MICHELSON: I think that the case is one of a marked hydroa vacciniforme of the type that crusts and leaves a scar. Galewsky has observed involvement of the eye in hydroa.

DR. SWEITZER: I think that the condition is hydroa. This involves the hands, ears and face. In other cases I have seen, the lesions were not so extensive. In

this case there is practically nothing left but scars, so one can only guess at the diagnosis. It would have been easier to offer a diagnosis had the patient been seen earlier.

DR. O'LEARY: I believe that the boy has an hydroa aestivale. The two active lesions above the left eyebrow are vesicles; no evidence of necrotic papules was found.

DR. FREEMAN: I cannot account for the marked improvement in this case. When I saw the patient two weeks ago his face was covered with crusts.

DR. KLEIN: The treatment has been what I usually use in these cases, salicylic acid and alcohol.

DR. GOECKERMAN: The thought occurs to me that the ointment used may have acted as a protecting agent, if the patient is photosensitive. I thought that the case was an interesting one. If the difficulties with the eyes are an episcleritis or a conjunctivitis, or even a deeper lesion, they would fit in with a diagnosis of hydroa vacciniforme, as the tissues of the eye may be as sensitive in this condition as the skin.

DR. KLEIN: I do not think there is any question that the eye symptoms are a part of the whole picture. First the boy had photophobia, and under treatment he had a good response in the right eye. The ophthalmologist said that this is the type of keratitis one often sees in cases of leprosy, but of course this is not leprosy.

URTICARIA PIGMENTOSA. Presented by DR. KLEIN.

A girl, aged 19, had an eruption covering the entire body, which consisted of elevated, smooth, papular lesions which varied from a bright red to a light brown. The lesions were most profuse on the trunk, but were also present on the arms and face. There was a certain amount of urtication on rubbing. The patient complained of no subjective symptoms. The eruption had been present for ten or twelve years.

DISCUSSION

DR. KLEIN: I presented this case at a meeting about a year ago. At that time there seemed to be a diversity of opinion as to the diagnosis. Dr. Michelson made a biopsy, which showed the characteristic observations of urticaria pigmentosa.

DR. MICHELSON: The section is typical for urticaria pigmentosa. There is marked pigmentation and an infiltrate of cells arranged in columns with a preponderance of mast cells.

DR. BUTLER: I believe that urticaria pigmentosa is related in some way to thyroid disturbance. I have in mind a patient with urticaria pigmentosa whom I observed from time to time for twenty years. This patient developed an exophthalmic goiter, and after operation five years ago, the urticaria pigmentosa completely disappeared.

ACNE CONGLOBATA. Presented by DR. KLEIN.

A boy, aged 15, had numerous comedones and large globular pustules on the face and back. Pressure on a large lesion would cause pus to exude from a distant lesion, showing that there were tortuous sinuses connecting the various lesions. The pus was of a yellow oily character, but there were no signs of active inflammation or adenitis. The usual local remedies employed for acne had been administered without much change. The case is presented for suggestions as to therapy.

DISCUSSION

DR. ARMSTRONG: I have had several of these cases. The first case I had was that of a boy who also had tuberculosis. I gave him tuberculin and he did so well that I treated two other patients in the same way, and they did well.

DR. SWEITZER: It is well to cut the lesions and keep them open for if they stay filled up and heal fibrosis will obtain. If they are kept open, they will flatten

down. I should think that this type of acne would respond better to roentgen therapy than the more severe type; this should be added to the local therapeutic measure of incision.

DR. MICHELSON: I think that this is a case of acne conglobata which is characterized by the formation of large cysts containing an oily fluid and some pus. Even though the lesions attain considerable size and fill with much tension, there is never any systemic absorption nor adenitis. There has been much discussion in the European literature concerning the association of acne conglobata and tuberculosis. It seems as though a tuberculous process may begin at the periphery of a lesion of acne conglobata. Acne cachecticorum is an entirely different condition and is probably a tuberculid. One point should be emphasized in regard to the treatment. When cysts of acne conglobata are opened, firm pressure should be maintained over a long period to prevent the cyst refilling with blood, with subsequent clotting which leaves a weltlike lesion.

Book Reviews

LE TRAITEMENT DES TEIGNES PAR L'ACÉTATE DE THALLIUM. PAR LE DOCTEUR JESUS GONZALEZ URUEÑA, Professeur de clinique dermatologique à la Faculté de médecine de Mexico. Paper. Price, 18 francs. Pp. 144, with 9 figures. Paris: Masson & Cie, 1928.

This monograph contains chapters on experimental work with, and the chemistry, therapeutics, biologic action and toxicity of, thallium acetate in addition to an extensive bibliography. Among 612 cases of fungus disease of the scalp seen by the author, 513 were of the *Trichophyton crateriforme* variety, 56 belonged in the *Trichophyton acuminatum* group, 23 were examples of favus and only 17 were due to *Microsporon*. Three hundred and sixty-five, or 59 per cent of these patients were cured by the internal administration of thallium acetate; in 34 a cure was not obtained and the result was doubtful in 35. Forty cases were incompletely observed. In 127 the final result was not known, while treatment was not given in 11 cases. Urueña believes that if all of the cases could have been followed up the percentage of cures would have approximated 91. His experience with thallium acetate dates from 1918. He also quotes the statistics of Cicero, Valerdi and Sanchez which with his own, give a total of 1,489 Mexican patients treated with this drug. In the foreign literature 1,115 cases are mentioned, 500 of which belonged to Lourier and Zwitkis of Kiev, Union of Socialist Soviet Republic. The patients so successfully treated by Dr. Earle of Desplaines, Ill., were not mentioned. Urueña states that, in doses of from 5 to 8 mg. per kilogram of body weight, thallium acetate is not toxic for children between the ages of 2 and 8 years. He says further, "It is dangerous to augment these doses and to repeat them until a sufficient time has elapsed after the initial dose, and particularly so if the original one was followed by symptoms of intolerance. The dose of fourteen milligrams per kilo is toxic for the guinea-pig and the rabbit." As a rule, epilation begins in about fifteen days after the drug has been given and is completed within two or three days. The border of the scalp is often uninvolved. The condition in thirteen of the cases was thallioresistant. After epilation an oil of cade salve should be rubbed into the scalp daily following a vigorous shampoo. If thallium acetate alone did not effect a cure in favus, it was best followed by careful epilation with forceps for some time. Urueña observed symptoms of temporary intoxication in eight of his patients, six of whom presented a pseudorheumatism. This is a comprehensive presentation entation of a method of treatment which deserves wider use, and the author is to be congratulated.

THE DERMATERGOSES OR OCCUPATIONAL AFFECTIONS OF THE SKIN. By R. PROSSER WHITE, M.D., M.B., C.M.Ed., M.R.C.S., London. Third edition. Price, 35 shillings. Pp. 734, with 58 illustrations. London: H. K. Lewis & Company, 1928.

It is a pleasure to call attention to the new edition of Prosser White's "Occupational Affections of the Skin," in which, by the way, he has introduced most of us to a new word in his title, "Dermatergoses or Occupational Affections of the Skin." The evidence of the success of the book and the importance of its subject are shown by the appearance of this third edition and the increase in size of the successive editions. The first edition has 165 pages, the second edition 300 pages and this edition 734 pages. While this new edition is a complete revision and contains an immense amount of new material, the character of the work is unchanged. This book is one of the most valuable works in the English dermatologic literature, and its popular success is altogether justified. It is hoped that Dr. White may long continue to create new editions of it.

In order to show that enthusiasm for the book has not entirely destroyed my critical faculty, I call attention to the fact that the text is marred by a good many misspelled words; for example, "ideopathic" for "idiopathic" (p. 69), "elepgantitis" for "elephantiasis" (p. 66), "keratolitic" for "keratolytic" (p. 96), "pickle" for "prickle" (legend figure 38). These mistakes, of course, are due to careless proofreading, and do not damage the usefulness of the book. Hardly anything, in fact, could alter one's appreciation of its great worth.

A valuable feature is the extraordinarily complete index embodied in this edition. It occupies 226 pages, and its usefulness cannot be overestimated in making the book one of easy reference.

DIE LICHTERKRANKUNGEN DER HAUT. SONDERBAENDE ZUR STRAHLENTHERAPIE. Vol. II. Prof. Dr. W. Hausmann and Priv.-Doz. Dr. H. Haxthausen. Paper. Price, 12 marks. Pp. 130. Berlin: Urban & Schwarzenberg, 1929.

The authors present a summary of their earlier work, to which is added a thorough review of the literature concerning this interesting subject. Numerous cutaneous diseases apparently caused by the ultraviolet rays are discussed in detail. The rays with a wave length of 3,000 angstrom units appear to be responsible for the dermatoses caused by light. In spite of the extensive investigations carried out by Fischer and the authors, little is known of the pathogenesis of skin diseases caused by the ultraviolet rays. Hematoporphyrin and other photodynamic substances have been found in relatively few of these disorders. A renewed attempt is made to establish hydroa vacciniforme of Bozin and summer prurigo of Hutchinson as clinical entities, chiefly on the basis of the objective symptoms. The section dealing with the degenerative action of light on elastic and collagen tissues and that on light dermatoses in domestic animals are illuminating. No new therapeutic suggestions are offered to sufferers from xeroderma pigmentosum, pellagra and hydroa. Noticeable is the omission of any description of a simple laboratory test for the detection of hematoporphyrin, for example, the simple test devised by Fischer.

Directory of Dermatologic Societies *

NATIONAL DERMATOLOGIC SOCIETIES

AMERICAN DERMATOLOGICAL ASSOCIATION

Joseph Grindon, President, 4500 Olive St., St. Louis.
C. Guy Lane, Secretary, 416 Marlborough St., Boston.
Place: San Francisco. Time: July 1-3, 1929.

SECTION ON DERMATOLOGY AND SYPHILOLOGY, SCIENTIFIC ASSEMBLY, AMERICAN MEDICAL ASSOCIATION

Jay Frank Schamburg, Chairman, 1402 Spruce St., Philadelphia.
William H. Guy, Secretary, Jenkins Arcade, Pittsburgh.
Place: Portland, Ore. Time: July 8-12, 1929.

BRITISH ASSOCIATION OF DERMATOLOGY AND SYPHILOLOGY (CANADIAN BRANCH)

D. King Smith, President, 122 Bloor St. West, Toronto.
E. J. Trow, Secretary, 122 Bloor St. West, Toronto.

LOCAL DERMATOLOGIC SOCIETIES

DERMATOLOGIC SECTION, LOS ANGELES COUNTY MEDICAL ASSOCIATION

George F. Koetter, Chairman, 1136 W. 6th St., Los Angeles.
H. Sutherland-Campbell, Secretary, 1936 Wilshire Blvd., Los Angeles.

SAN FRANCISCO DERMATOLOGICAL SOCIETY

Ernest Chipman, President, 350 Post St., San Francisco.
H. J. Templeton, Secretary, 3115 Webster St., Oakland.

ATLANTA DERMATOLOGICAL SOCIETY

Jack W. Jones, President, Medical Arts Bldg., Atlanta, Ga.
Francis Jones, Secretary, Medical Arts Bldg., Atlanta, Ga.

CHICAGO DERMATOLOGICAL SOCIETY

Harry R. Foster, President, Colby-Abbott Bldg., Milwaukee.
E. A. Oliver, Secretary, 55 E. Washington St., Chicago.

IOWA AND WESTERN ILLINOIS DERMATOLOGICAI ASSOCIATION

Robert E. Jameson, President, 1015 First National Bank Bldg., Davenport, Iowa.
A. T. Leipold, Secretary, 1419½ 5th Ave., Moline, Ill.

LOUISIANA DERMATOLOGICAL SOCIETY

Ralph Hopkins, President, 124 Barome St., New Orleans.
Thomas A. Maxwell, Secretary-Treasurer, 1119 Union Indemnity Bldg., New Orleans.

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* Secretaries of dermatologic societies are requested to furnish the information necessary for the editor to make this list complete and to keep it up to date.

BALTIMORE AND WASHINGTON DERMATOLOGICAL SOCIETY

Lloyd W. Ketron, President, Medical Arts Bldg., Baltimore.
Leon Ginsburg, Secretary, 1800 N. Charles St., Baltimore.

DETROIT DERMATOLOGICAL SOCIETY

George Van Rhee, President, 10 Peterboro St., Detroit.
Ralph A. Perkins, Secretary, 276 Erskine St., Detroit.

MINNESOTA DERMATOLOGICAL SOCIETY

W. Goeckerman, President, Mayo Clinic, Rochester.
D. D. Turnacliff, Secretary, Yeates Bldg., Minneapolis.

ST. LOUIS DERMATOLOGICAL SOCIETY

Robert H. Davis, President, Missouri Bldg., St. Louis.
Norman Tobias, Secretary, Missouri Bldg., St. Louis.

NEW ENGLAND DERMATOLOGICAL SOCIETY

C. Guy Lane, President, 416 Marlborough St., Boston.
Arthur M. Greenwood, Secretary, 416 Marlborough St., Boston.

BRONX DERMATOLOGICAL SOCIETY

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Index to Current Literature

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Treatment of Psoriasis. S. S. Greenbaum, Pennsylvania M. J. **32**:321 (Feb.) 1929.
Treatment of Pyodermia. F. Lotte, Paris méd. **1**:77 (Jan. 19) 1929.
Treatment of Urticaria. G. J. Busman, Pennsylvania M. J. **32**:325 (Feb.) 1929.

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